

3dcreative

Issue 057 May 2010



Interview
Tamara Bakhlycheva



The Gallery
Jukka Tahtinen, Boris Patschull,
Adam Skutt & more!



Project Overview
"Robot in Disguise"
by Valentin Yovchev



FREE - Inside Look!
Digital Art Masters:
Volume 4 Project Overview
by Viktor Fretyán

Look for this button inside

DOWNLOAD RESOURCES

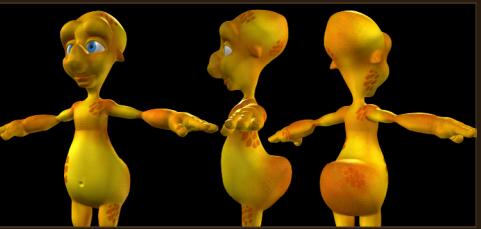
- Free Environment Lighting Artist Scene & Textures
- Free Rigging model
- Free Mudbox Sculpting Videos

CHARACTER MODELING AND ENVIRONMENT LIGHTING



Environment Lighting: Overcast

Our series artist **Andrew Finch, Andrzej Sykut, Luciano Iurino** and **Fredi Voss** return for the final instalment in this lighting tutorial series.



Cédric Séaut Character Modeling

In the final chapter of this tutorial series, Cédric shows us all about fabric sculpting in ZBrush.

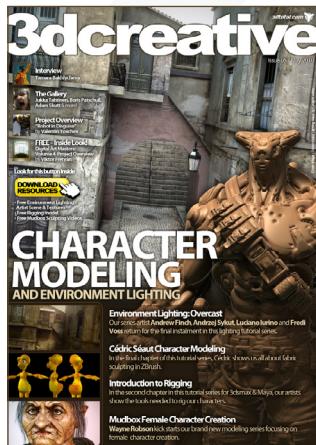


Introduction to Rigging

In the second chapter in this tutorial series for 3dsmax & Maya, our artists show the tools needed to rig our characters.

Mudbox Female Character Creation

Wayne Robson kick starts our brand new modeling series focusing on female character creation.



EDITORIAL

Welcome to the **57th Issue** of 3DCreative magazine. I hope you are all well and are looking forward to what the May issue has in store.

Last month we said goodbye to Eric Ennis and his tutorials about Vray, this month we give a warm welcome to the Mudbox genius **Wayne**

Robson. Wayne will be showing us some of the great features available when using Mudbox and talking us through how to use them to create female characters. This month Wayne will be showing us how to sculpt an old lady.

As we say hello to Wayne Robson we say goodbye to **Cédric Séaut**. This month's issue features the last part in his Character modeling tutorial. Cédric talks us through the final part of his tutorial and shows us how to model the pants of his character along with all their accessories. We hope you have all enjoyed Cédric's step by step guide to character modeling. We are looking forward to seeing all of your efforts to create characters being submitted to our online galleries at www.3dtotal.com.

Last month we started a new series called an Introduction to Rigging. We continue the series this month by looking at the tools that you can use to rig your character. **Richard Maegaki** and **Danilo Pinheiro** will be talking us through the tools in Maya whilst **Luis San Juan Pallares** will be our guide in Max.

This month's issue also see's the final instalment of our Outdoor Environment lighting series. There is no need to fear though because next month we start our indoor environment lighting series dealt with in all the same software, and the scene is created by the interior king **Viktor Fretyán**. But before we get carried away we still have the final part of the Outdoor series and in this issue we deal with an Overcast Day, dealt with in 3DS Max and Mental Ray by **Andrew Finch**, 3DS Max and Vray by **Andrzej Sykut**, Maya by **Luciano Iurino** and Cinema 4D by **Fredi Voss**.

Ok, so now on to interviews, and this month we have an interview with a lady from a very talented family **Tamara Bakhlycheva**. Tamara is the wife of Dominance IV winner Vadim Bakhlycheva. Tamara is not only a very talented 3D artist working in the games industry but also an excellent 2D artist. Tamara tells us how with a bit of grit and determination she managed to carve out her own path into the industry she had loved from her childhood.

CONTENTS

What's in this month?

TAMARA BAKHLYCHEVA

Freelancer 3D Character Artist

THE GALLERY

10 of the Best 3D Artworks

CHARACTER MODELING

Chapter 5: Pants (ZBrush Fabric Sculpting)

NEW!! MUDBOX FEMALE

Character Creation Chapter 1: Gaunt/Old

INTRODUCTION TO RIGGING

Chapter 2: Knowing your Tools

"ROBOT IN DISGUISE"

Project Overview by Valentin Yovchev

"COUCH BY THE WINDOW"

Digital Art Masters: Volume 4 – Free Chapter

ABOUT US

3DTOTAL.com Ltd Information & Contacts

ENVIRONMENT LIGHTING

Series for 3ds Max MR & V-Ray, Maya & Cinema 4D

EDITOR

Simon Morse

LAYOUT

Layla Khani

CONTENT

Simon Morse

PROOFING

Jo Hargreaves

LEAD

DESIGNER

Chris Perrins

MARKETING

Claire Hughes

FREE STUFF!

Wherever you see this symbol, click it to download resources, extras & even movies!



Last but not least we have another excellent 3D Gallery featuring artwork from **Gunnar Assmy**, **Olivier Vernay-Kim**, **Lee Young Woo**, **Adam Skutt** and many more. We also have a making of by **Valentin Yovchev** who tells us how he made his image Robot in Disguise.

I am sure you will agree that once again we have provided a health portion of 3D to keep you going through to the next issue, so until then, enjoy.

Get the most out of your Magazine!

If you're having problems viewing the double-page spreads that we feature in this magazine, follow this handy little guide on how to set up your PDF reader!

SETTING UP YOUR PDF READER

For optimum viewing of the magazine, it is recommended that you have the latest Acrobat Reader installed. You can download it for free, here: [DOWNLOAD!](#)

To view the many double-page spreads featured in 3DCreative magazine, you can set the reader to display 'two-up', which will show double-page spreads as one large landscape image:

1. Open the magazine in Reader;
2. Go to the **VIEW** menu, then **PAGE DISPLAY**;
3. Select **TWO-UP CONTINUOUS**, making sure that **SHOW COVER PAGE** is also selected.

That's it!

CONTRIBUTING ARTISTS

Every month artists from around the world contribute to 3DCreative, and you can find out a little more about them right here! If you'd like to get involved in 3DCreative magazine, please contact: simon@3dtotal.com

ENVIRONMENT LIGHTING OUTDOOR SCENE

Chapter 3 of our popular Environment Lighting tutorial series with a great lineup of talented artists:

Andrew Finch (3ds Max + MR), **Andrzej Sykut** (3ds Max + Vray), **Luciano Iurino** (Maya) and **Fredi Voss** (Cinema 4D).



ANDRZEJ SYKUT

When it comes to CG, Andrzej is a bit of a generalist, but lighting is where the fun is for him – that, and post-production/compositing. He currently works at Platige Image, and also does some freelancing as well. While he enjoys his work, it's also time-consuming, so he tries to get away from the computer as often as possible to enjoy the world. <http://azazel.carbonmade.com/> eltazaar@gmail.com



ANDREW FINCH

Aged 27 and living in the great city of Birmingham in the U.K., Andrew has a degree in 3D Animation which

inspired his passion for environment art. He now works as an environment artist at Rebellion, and says, "Working in the games industry is exciting: you never know what the next project will be and there's always something new to learn. This helps to keep you creative and grow as an artist." a Finchy@gmail.com



FREDI VOSS

Living and working as a fine artist and 3D freelancer in Germany, Fredi – a.k.a. rollmops – can often be found on the various web communities, where he has also won several awards. His client list includes Audi and Siemens, and he also has an Animago Award and a Fine Art degree under his belt!



<http://fredivoss.cgsoociety.org/gallery/> vuuxx@gmx.de



LUCIANO IURINO

Started back in 1994 with 3d Studio on MS-Dos as a modeller/texture artist. In 2001 he co-founded PM Studios (an Italian

videogame developer) with some friends, and still works for it as the lead 3D artist. He also works as a freelancer for different magazines, web-portals, GFX and videogame companies, and recently he left the 3ds Max environment to move on to XSI.

<http://www.pmdstudios.it> | iuri@pmdstudios.it



WAYNE ROBSON

is a freelance digital artist who has taught Mudbox around the world and has been asked to lecture at the Vienna science academy. He is the programmer behind 'MudWalker' and the mental ray shader for vector displacement using Mudbox maps. currently he's works as a CGI supervisor for Project 2813. He owns Mudbox Hub and PsychoCore Software. www.dashdotslash.net wayne@dashdotslash.net



CONTRIBUTORS

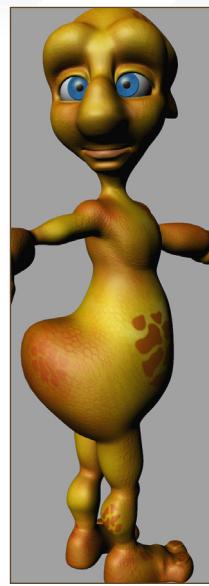
3dcreative



DANILO PINHEIRO

Danilo Pinheiro is a Brazilian with a Physics degree from UFMG. He worked for 5 years as a 3D generalist in films, advertising, arts, HQ, video clips, TV series, etc. After that, he is working as a Character TD, because he enjoys solving problems.

<http://nilouco.blogspot.com>
nilouco@gmail.com



LUIS SAN JUAN PALLARES

My name is Luis San Juan, I am a freelancer with over 9 years CG experience. I have worked as a character setup supervisor and created tools for the studios I worked at, such as Nexus Productions, Keytoon Animation Studios, Ilion Animation Studios and the Mill.



<http://www.luis-sanjuan.com>
luis@luis-sanjuan.com



VALENTIN YOVCHEV

Valentin Yovchev is a 21 year old freelancer living in Ruse/Bulgaria. Valentin started using 3D when he was 11 years old, and now he works freelance making Interiors, Game characters, concept art, and 3D illustrations.

<http://spybg.darkfolio.com>
spybg@abv.bg



RICHARD MAEGAKI

Born in Brazil, Richard Maegaki studied at Melies School of Cinema and Animation where he discovered a passion for rigging. After a brief time at Casablanca Animation as a Character Rigger, Richard was hired at Vetro Zero/Lobo and is working there as a Lead Character TD since 2007.



<http://riggerman.animationblogspot.com/>
richardyzo@gmail.com



TAMARA BAKHLYCHEVA

Tamara Bakhlycheva was born in Russia and now that she has graduated traditional art-school and art-college resides in

Moscow working as freelancer 3d character-artist and dreaming about working for Blizzard.

Tamara loves to play video games and has done since the age of 5. Tamara has been making art for the video games industry since 2005.

tamara.salatova@gmail.com



WOULD YOU LIKE TO CONTRIBUTE TO 3DCREATIVE OR 2DARTIST MAGAZINE?

We are always looking for tutorial artists, gallery submissions, potential interviewees, 'making of' writers, and more. For more information, please send a link to your portfolio, or send examples, to: simon@3dtot.com

Vwoh!NI[D3r

Join the people behind the pixels in the world capital of digital imagination.

The People Behind the Pixels

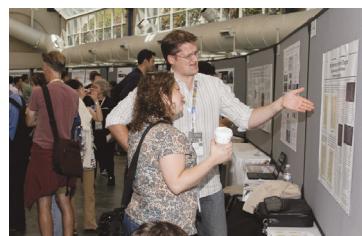
SIGGRAPH 2010

Los Angeles



share ideas build relationships advance your career be inspired

French Roast © 2009 Fabrice O. Joubert, The Pumpkin Factory; Touch the Invisibles © 2009 Junji Watanabe, PRESTO Japan Science & Technology Agency



The 37th International Conference and Exhibition on Computer Graphics and Interactive Techniques

Conference 25-29 July 2010 Exhibition 27-29 July 2010

Los Angeles Convention Center Los Angeles, California USA

Art Gallery • Art Papers • Birds of a Feather • Computer Animation Festival • Courses • Emerging Technologies
Exhibition • Exhibitor Tech Talks • Featured Speakers • Game Papers • International Resources • Job Fair • Panels
Posters • Research Challenge • SIGGRAPH Dailies! • Talks • Technical Papers • The Studio

FOR COMPLETE DETAILS:

www.siggraph.org/s2010

SPONSORED BY ACM SIGGRAPH



FOLLOW US ON:



AVAILABLE NOW!

DIGITAL ART MASTERS

: VOLUME 4

288 PAGE PREVIEW ONLINE!



FEATURES 50 OF THE FINEST DIGITAL
2D AND 3D ARTISTS WORKING IN THE
INDUSRTY TODAY, FROM THE LIKES OF:

LOÏC E338 ZIMMERMANN | JAMES PAICK

CRAIG SELLARS | JELMER BOSKMA

MACIEJ KUCIARA | DAARKEN | MAREK DENKO

KEKAI KOTAKI | ANDREW HICKINBOTTOM

MAREK OKOŃ

BUY THE BOOK TO SEE JUST HOW
THEY CREATE THEIR INCREDIBLE
IMAGERY!

HARDBACK - 21.6CM X 27.9CM IN SIZE

288 FULL COLOUR PREMIUM PAPER PAGES

ISBN: 978-0-240-52171-8

“DIGITAL ART MASTERS IS GETTING
BETTER AND BETTER AT SHOWCASING
SOME OF TODAY'S BEST DIGITAL
ARTISTS. THE WAY THE BOOK SHOWS
THE PROCESSES OF ACHIEVING
GREAT PICTURES PROVIDES A GOOD
OPPORTUNITY TO LEARN FROM THESE
ARTISTS, AND KEEPS YOU CHALLENGED
IN YOUR OWN ART.”

RAPHAEL LACOSTE | WWW.RAPHAEL-LACOSTE.COM/



TAMARA BAKHLYCHEVA

Tamara and Vadim Bakhlycheva are couple who work and play at some serious CG. Married and living in Moscow, we quiz Tamara (aka firstkeeper) on what drives her, her ambitions, how she met Vadim (aka slipgatecentral) and what things they talk about over a romantic meal!



“ONE OF THE HAPPIEST DAYS OF MY YOUTH WAS WHEN I GOT MY OWN PC, MANY GAMES WERE PLAYED, AND AT SOME POINT I INSTALLED “THIEF 3 DEADLY SHADOWS”. GOSH! THIS GAME TORE OFF MY HEAD AND KICKED IT AWAY!”

AN INTERVIEW WITH TAMARA BAKHLYCHEVA

At one point in your childhood I guess you may have thought wow this art stuff is cool and then now you are working in a successful games company as a character artist, so can you briefly fill in your journey in-between for us?

I started to learn drawing when I was 6 years old. I went to a small art class for kids. We were painting, sculpting with clay, and making art using many interesting techniques. So it was fun, and later I decided to continue my art education and go to an art-school.

I can't say that I was a very thorough student, but I liked drawing in a fantasy-style, especially the ancient Greek myths. After my high-school graduation I attended Saint-Petersburg Art-college where for 3 years I was learning to do and teach art.

Anyway, after graduating I was sure that I didn't want to be an art-teacher, and a couple years ago I discovered the magical world of computer graphics, and I started to learn Photoshop and to draw funny things. At this moment I want to turn back in time, when 5 years ago my parents got me a birthday gift, a video-console called Aida (some clone of Atari I think). That was the beginning of my video game addiction. Later there was a Sega Mega Drive II. I can't say exactly how much time I spent on Mortal Combat, Dune II, the Sonic series and other games, but I'm sure it was a lot.

"BUT I'VE ALWAYS DREAMT OF SOMETHING MORE THAN A SIMPLE TEXTURE ARTIST JOB."

There was a time when I didn't have a personal computer, and I often visited my friend, a happy PC owner, to play "Dungeon Keeper". One of the happiest days of my youth was when I got my own PC, many games were played, and at some point I installed "Thief 3 Deadly Shadows". Gosh! This game tore off my head



3D MINI: 3D-TRANSFORMATIONS
FIRSTKEEPER.DEVIAINTART.COM

PSYCROW: 2120 TRIS
STUFF: 610 TRIS
JIM: 269 TRIS
TOTAL: 2999 TRIS

and kicked it away. I had never seen that kind of atmospheric and interesting game before. At this time I had passed my college studies and thought to myself, "Why not, I have no idea about game art, but I should try that". So for 6 months I sent my poor resume into many of the Saint-Petersburg's game companies, and got no replies of course. But if you keep trying you get what you want sooner or later. Then finally one day I got job as a texture-artist.

At the beginning I dreamed of becoming a concept artist, but whilst in my first job I started to learn 3d modeling and I really liked it. Time passed by, and I was happy to work in the game-development industry, but I've always dreamt of something more than a simple texture artist job. That's why I tried to learn something about 3d modeling and cg-painting in my spare time. I've spent lot of time in art-forums and LiveJournal, chatting with cg-artist and in one of them I met the great 3d-artist Molotov aka

Slipgatecentral. I didn't imagine that he'd not only be my teacher, but eventually my husband, this was another happy point in my life. At last I moved to Moscow and started freelancing for the art-awesome game "Allods online" and that let me spend more time improving my art-skills.

"PLEASE, PASS ME THE SALT DEAR, AND....DON'T FORGET TO BUILD TWO SPINE CRAWLERS NEAR YOUR RESOURCES LINE NEXT TIME."

Thanks for that fantastic glimpse into your past. Being married to Molotov do you find yourselves talking about the latest feature of zbrush when you are having a romantic meal?

Sure, we often talk about our jobs, current art-projects or strategies for Zerg in Star Craft 2. I know it seems far from being like a romantic meal. Please, pass me the salt dear, and....don't forget to build two Spine Crawlers near your resources line next time."

Looking at your Deviant Art portfolio <http://firstkeeper.deviantart.com/> you seem to have mastered 2d, concept, 3d sculpting, real-time, not to mention some hand-made costumes! Did one discipline lead onto another? And where do you like to concentrate your skills at the moment?



Of course all disciplines and experiences including negative ones can be useful for work. For example 2d art helps to make hand-painted textures. Knowledge of fashion history gives me more references for character design, I've studied a lot of handwork disciplines at art-college: for example embroidery, leather working, sculpting, and I'm pretty sure these things increase accuracy.

Currently I have given myself a goal to learn more about digital sculpting, human anatomy



and next-gen character modeling, and try to practice more concept-art. I have no idea how I'll find time for all that, but it's so nice that I share my interests with my husband.

For all the students who also want to become digital character artists, from your experience what traditional mediums do you think would be the most useful for them to study and why? I am not going to say anything new, it's a common subject - drawing (still life, portraits), sculpting - all these skills and disciplines will be very useful for cg-artists, costume history especially if you going to do fantasy art.

Watching another cg and traditional artists is a very important move, if you carefully analyze famous drawings you can learn effective ways to improve your own artworks.

You seem to enjoy competing in CG competitions (and also seem to do well in them!) what do you like most, and how would you advise any challenge newbies to get started? Many of the works that I've made in my free time were done for various 3d-characters competitions. That's a pretty nice way to develop skills. You get a theme and start to develop character. The big positive is that

there are restrictions which let you to keep your imagination in defined limits, which is very important when you are making a video game character. Things like deadlines are a good way to learn the basic 3d-art pipeline. At the same time you can discover new things from other participants, and rivalry always makes it more fun. It is very important to keep trying even if you don't win anything. You are already winner if you finish your entry, because practice and experience are the most important things in our profession.





What has been your favourite competition to date?

Dominance war IV because it was massive, challenging, and very exciting, so many people, so many awesome pieces of artwork. It was great motivation to put myself together and learn new things and get a nice finished piece for my portfolio.

“ I FEEL COMFORTABLE ENOUGH IN A MEN’S ENVIRONMENT, BECAUSE I HAVE INTERESTS WHICH MANY GIRLS HAVEN’T.”

Now then, you’re a girl right!? And In a small minority in the games industry I imagine, so how do you find working in the male dominated industry, and why do you think there so few girls?



I feel comfortable enough in a men's environment, because I have interests which many girls haven't. A major problem in my country is that game-related jobs aren't so popular and are a very unreliable place to work. Many companies and game projects

could be cancelled at any moment. We have no game development courses in our universities except unrelated classic 2d art, animation or programming. Not many women are interested in technical 3d art, it means a lot of time sitting in front of computer.







Another side of the coin is that sooner or later every woman should try to give birth to a child and raise him. That means in many cases that she doesn't have enough time for her professional life for the next few years. I just hope I'll be able to combine these things when it's my turn.

I think the number of women in the game industry increases every year, it's a normal process for such a young industry.

It sounds like you enjoy your work, with a lot of video game companies around the world overtime can be expected. Is this the same in Russia?

Yes it's the same in Russia. For example, we had a really hard time last year when we worked six days a week without a new year holiday, but

it is worth it when you think how nice your game will look in the end, and of course possible bonuses and a few days off-work to take a rest afterwards are good.

Do you have any particular aims or ambitions you would like to achieve, both in your art career and personal life?

My main goal at this moment is to get a job at Blizzard as a character artist, I think many artist desire the same thing, but I understand that I have to work very hard to become a really high quality artist to make that happen. Anyway I have a nice example in front of me every day - my husband. A man who made himself into a really great artist, and I'm very happy to know him and he always supports me in my dreams. I thank him for that.

It's been great chatting with you Tamara, thanks again for your time and of course keep showing us your fantastic new work, we are very much looking forward to seeing it.

I would like to say thanks to the forum team for their outstanding activity. I've visited many forums before, but yours (<http://forums.3dtot.com>) is one of the best- so many interesting competitions, tutorials and people. Keep it up! :)

TAMARA BAKHLYCHEVA

For more from this artist contact them at tamara.salatova@gmail.com

Interviewed By : Tom Greenway



"ZBrush 3.5 has allowed artists a remarkable amount of freedom. ZSketch in particular has redefined traditional polygon modeling and made it much more intuitive. I am grateful for the benefits that ZBrush provides"

CGI Artist
Tae-Bong Lim

Pixologic™
makers of **ZBRUSH®**

To join our online community visit
www.ZBrushCentral.com



Available now for PC

This Month we Feature:

Adam Skutt
Gunnar Assmy
Dupagne Antoine
Olivier Vernay-Kim
Lee Young Woo
Jukka Tahtinen
Emre Dagtekin
Camille Lymer
Boris Patschull
Pawel Swierczynski



THE GALLERY



PIT LANE BURNOUT

Gunnar Assmy (Above)

<http://gspotsimulant.deviantart.com/> | gunnar_assmy@yahoo.de

HULK

Camille Lymer (Below)

camillelymer@hotmail.com





ROMAN LEGIONNAIRE

B. Patschull

<http://bebob.cgssociety.org/gallery/>

borispatschull@gmx.de



SISTER OF MERCY

Pawel Swierczynski

<http://www.reanimacja.com>

reanimathor@gmail.com



THE PRINCES DESK ROOM

Olivier Vernay-Kim

<http://oli.vernay.free.fr>

kive7701@yahoo.fr





COMEDIAN

Jukka Tahtinen

<http://www.graph3d.com/>

info@graph3d.com

RUMPLESTILTSKIN

Adam Skutt

www.adamskutt.carbonmade.com

adamskutt@hotmail.com



CITROËN 15CV

Dupagne Antoine

dupfou@yahoo.fr







DARK TEMPLAR

Lee Young Woo

kakasse@naver.com

VIOLIN GIRL

Emre Dagtekin

emre-dagtekin@hotmail.com





INTRODUCING THE GNOMON WORKSHOP ONLINE TRAINING SUBSCRIPTION

The **Gnomon Workshop** is proud to announce the release of three new subscription plans to its vast training library. Often requested by individual customers and studios alike, these new subscription plans are being offered at a small fraction of the cost to purchase the same DVDs separately - a great value in professional arts training.

The Gnomon Workshop has created over 300 DVDs and online tutorials - over 1000 hours of training - to educate, inspire and motivate artists around the world. Taught by leading visual effects artists, concept designers, illustrators and sculptors, our tutorials will help you develop the skills you need to become a better artist. For as little as \$25/month you can access this unrivaled library, watch new DVDs and online tutorials as they are released, and download tutorial project files.

Purchase a subscription to our entire training library, Plan 1, and broaden your skills as an artist with access to an amazing range of lectures and demos. Choose Plan 2 to learn from the best 3D artists working in the Film and Games industry, or Plan 3 to learn from and be inspired by some of the best artists, Art Directors, Illustrators and Sculptors teaching today.

PLAN 1
All Tutorials

\$499/yr

PLAN 2
Visual Effects & Games

\$299/yr

PLAN 3
Design & Traditional

\$299/yr



WHAT YOU'LL GET:

24/7 access to the library without the hassle of playing DVDs or storing files locally.

Fast streaming content - all the videos are presented in same size as they appear on the DVDs.

All of the project files that accompany the tutorials on DVD are available to subscribers.

All new tutorials and DVDs are automatically added FREE throughout the duration of your subscription plan.

Learn at your own pace - the video player allows you to pause, rewind and fast forward, as well as go to full screen mode.

TO SIGN UP & FIND OUT MORE INFORMATION VISIT
WWW.THEGNOMONWORKSHOP.COM/SUBSCRIPTION

This series of five tutorials will focus on the topic of outdoor lighting and more specifically the task of setting up different light rigs to reflect a variety of weather scenarios. Each of the chapters will use the same base scene as a starting point and show a step by step guide to finding a lighting and rendering solution to describe a set time of day under different conditions ranging from a damp foggy night to sunset / sunrise.

The tutorials will explain the type of lights used and how to set up their parameters alongside the combined rendering settings in order to achieve an effective result. The manipulation of textures will also be covered in order to turn a daylight scene into night for example, as well as a look at some useful post production techniques in Photoshop in order to enhance a final still.

FOLLOW

This month our artists will show you how to turn our seemingly boring scene into a truly atmospheric environment with the Fifth chapter covering Overcast.

So if your interested in seeing the Final chapter of this amazing series, please flip to the back of this magazine and enjoy.

- 3DSMAX + MENTAL RAY | PAGE 136
- 3DSMAX + V-RAY | PAGE 142
- CINEMA 4D | PAGE 148
- MAYA + MENTAL RAY | PAGE 154

FOLLOW THIS
TUTORIAL SERIES ON
PAGE 136

ENVIRONMENT OUTDOOR LIGHTING



CHAPTER 1 | JANUARY ISSUE 053

CONCEPT

CHAPTER 2 | FEBRUARY ISSUE 054

SHOES (ZBRUSH PLASTIC SCULPTING)

CHAPTER 3 | MARCH ISSUE 055

HANDGUN (HARD-EDGE MAX/SILO)

CHAPTER 4 | APRIL ISSUE

CHEST (ZBRUSH MECHANICAL SCULPTING)

CHAPTER 5 | THIS ISSUE

PANTS (ZBRUSH FABRIC SCULPTING)

CÉDRIC SÉAUT CHARACTER MODELING

The aim of these tutorials is to provide both an efficient and methodical approach to creating characters that can encompass both organic and mechanical components and equip artists with the knowledge to learn techniques used by industry professionals. The series provides an in depth account of creating a character from the concept and base mesh stages through to the final detailing and high poly sculpt. It will as its subject adopt the theme of an alien humanoid in battle dress, partly clad in armor and carrying weapons.

Each of the chapters will address a certain aspect of the design and show a step by step guide covering the principal techniques and methods used to sculpt the numerous components including the chest and body armor, anatomical detail, footwear and clothing along with various accessories and weaponry. Much of the high poly sculpting and anatomical refinement takes place in Zbrush, discussing the appropriate brushes and tools used but the author will also integrate 3dsMax into the pipeline as a way of preparing some of the base meshes and mechanical components. Although 3dsMax is used in conjunction with Zbrush the modeling techniques are equally applicable to most other 3d packages with the principal lessons proving universal.



CHAPTER 5 - PANTS (ZBRUSH FABRIC SCULPTING)

Software Used: ZBrush, 3ds Max, Silo, and

Photoshop

INTRODUCTION

In the following chapter, we are going to see how to sculpt the pants from the basic concept we achieved in the first chapter. We are then going to introduce several accessories that we will integrate into it.

Fig 01



Fig 02



1. So let's start from the basic concept we achieved in Chapter 1 (Fig.01).

2. Basically we are going to follow the same procedure as we did in the last chapter and also for the shoe. The first stage involves polypainting the concept to use as a guide later on when reconstructing the topology (Fig.02).

3. Don't hesitate to re-read the previous chapter and to follow the step by step progress.

Here you can see the new mesh. In the second image you will notice that the top and the bottom are capped. It's still good to close your mesh in order to get a better texture (Fig.03a – b).

Fig 03a

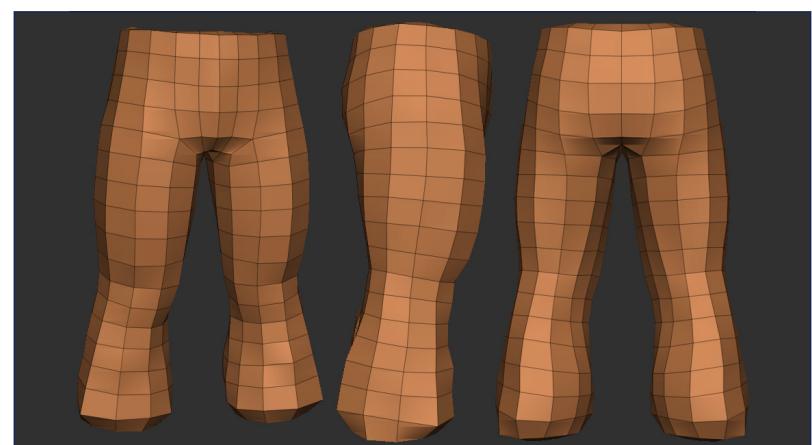
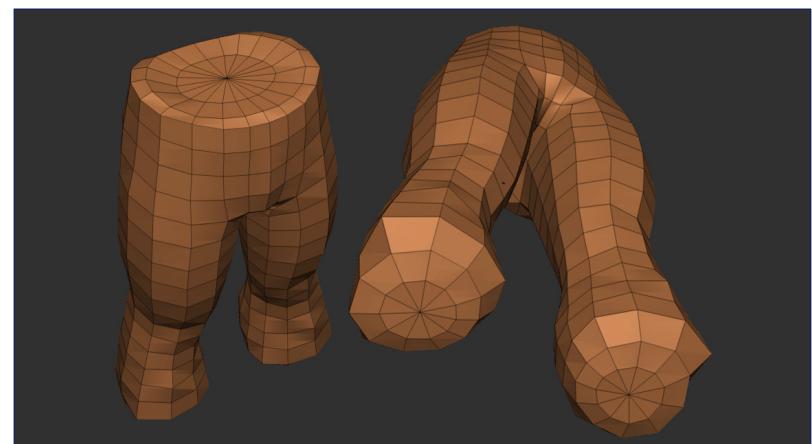
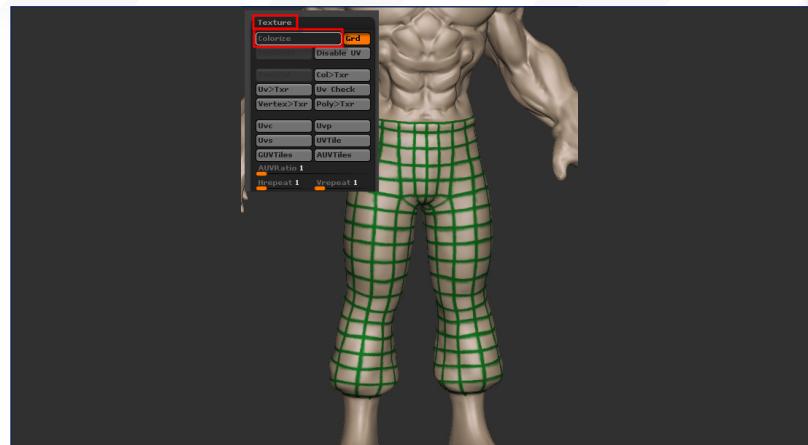


Fig 03b



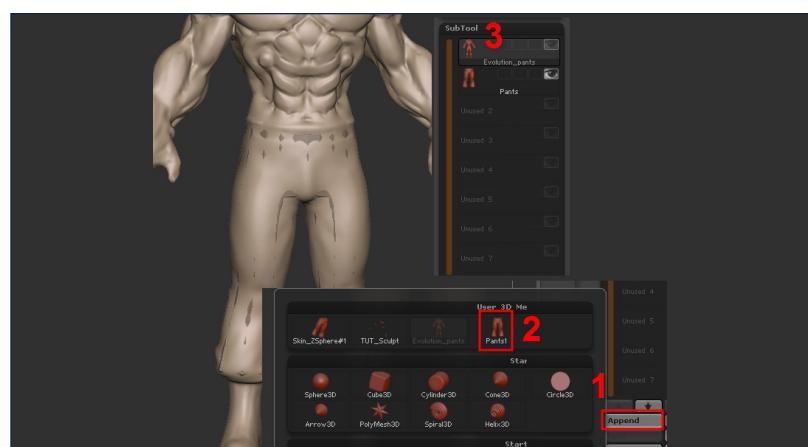
4. Now go back to your concept mesh as we are going to re-project all the information from the old version onto the new one. First of all turn off Colorize to hide Polypaint (Fig.04).

Fig 04



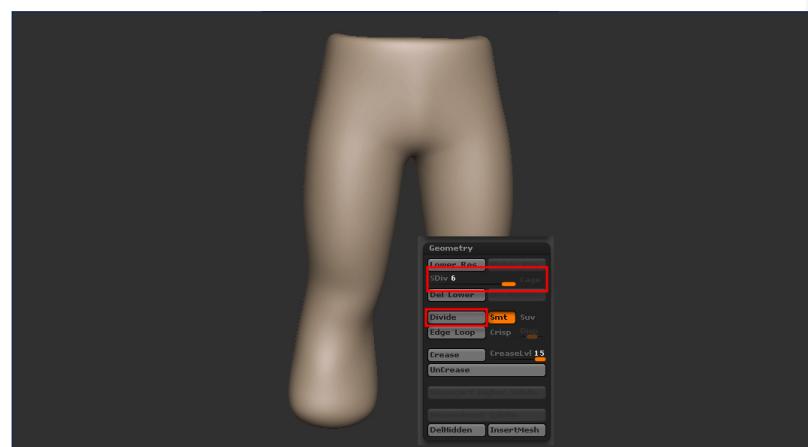
5. Under your Subtools, press Append to display the new menu that will allow you to select the new pants mesh. After selecting it you will see it just under your main Subtool (Fig.05).

Fig 05



6. Subdivide it several times but be careful to keep under 3 million polygons, otherwise you will have a lack of memory which will encroach on your workflow. You just need enough resolution to get a nice projection. Go to the bottom, open up the morph tab and press Store in order to store this current state in the memory (Fig.06).

Fig 06



7. Press "Project All" to transfer all the information from the old mesh onto the new version. As you can see below, you may have some artifacts. This phenomena comes from the polygons you created to cap the mesh but there is no need for concern as the morph will allow you to fix these bugs (Fig.07a - b).

Fig 07a



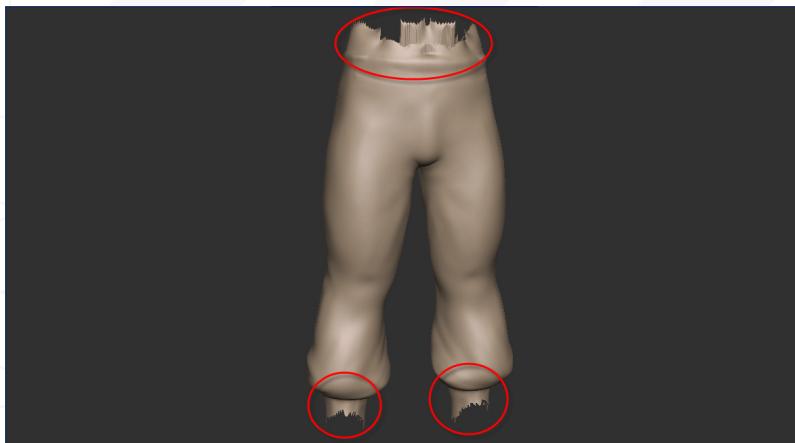


Fig 07b



Fig 08a

8. Thanks to the Morph and Smooth brushes, you can correct the artifacts easily. It's important to change the intensity of the morph brush in order to remove the distortion quickly. In the second picture, you can see a preview of the result (Fig.08a – b).



Fig 08b

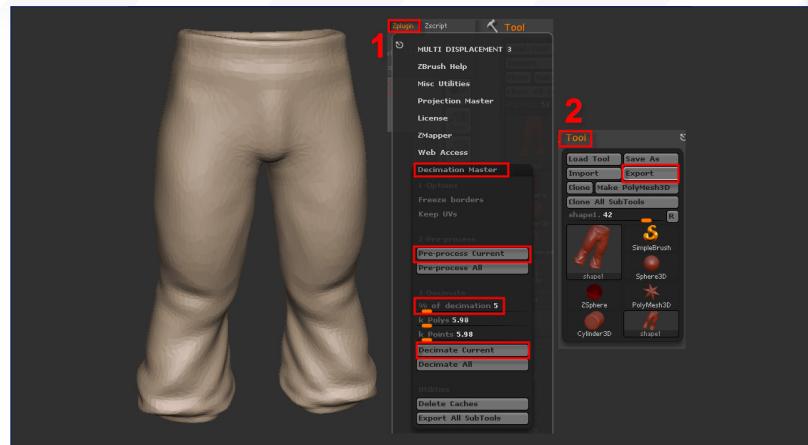


Fig 09

9. We are now going to paint a first pass of folds on the pants. To keep smooth unified volumes and avoid any bumpy effects, we will use the Standard brush with the LazyMouse as shown below. It is then a case of slowly drawing in some lines. Work in symmetry to save time as the accessories will break this up later. It's good to have some references when you work on folds in the cloth so don't hesitate to take some photos of yourself to help or alternatively use the internet (Fig.09).

10. Before continuing with the folds we are going to create the base meshes for the accessories. We are going to need an iteration of the pants for that. Open the Zplugin menu and change the Decimation parameters as shown below. After the calculation, you will have a lighter version that you can use in 3dsmax to figure out the accessories (Fig.10).

Fig 10



11. Import the above created mesh into 3dsmax (Fig.11).

Fig 11



12. Create a simple plane and center it in the scene. Now move it to the middle of the thigh as shown in the second picture (Fig.12a – b).

Fig 12a

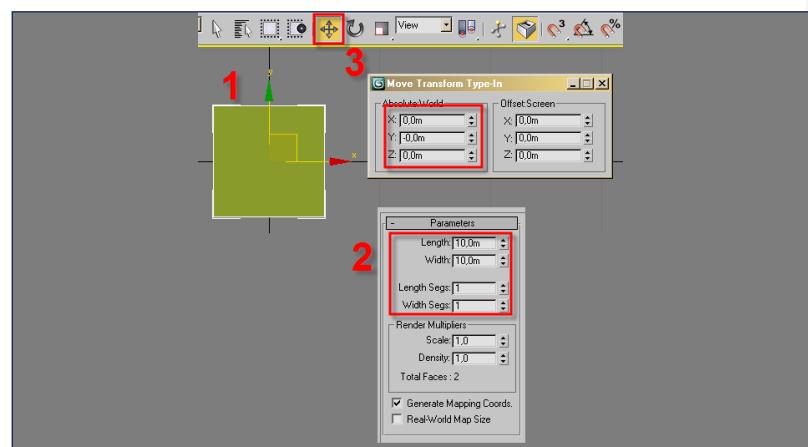
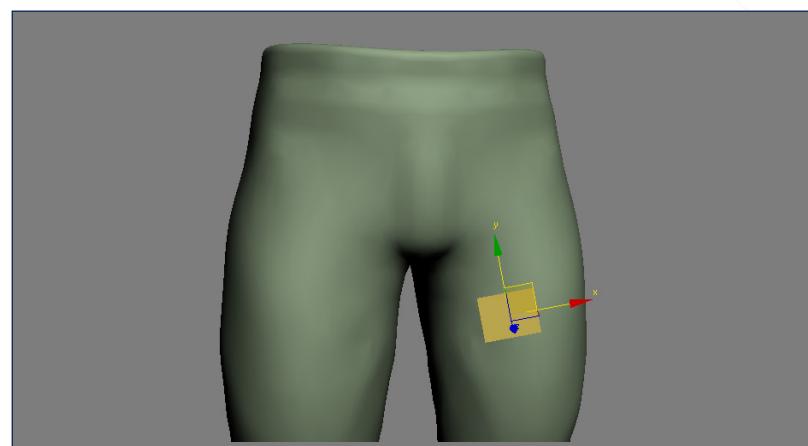


Fig 12b



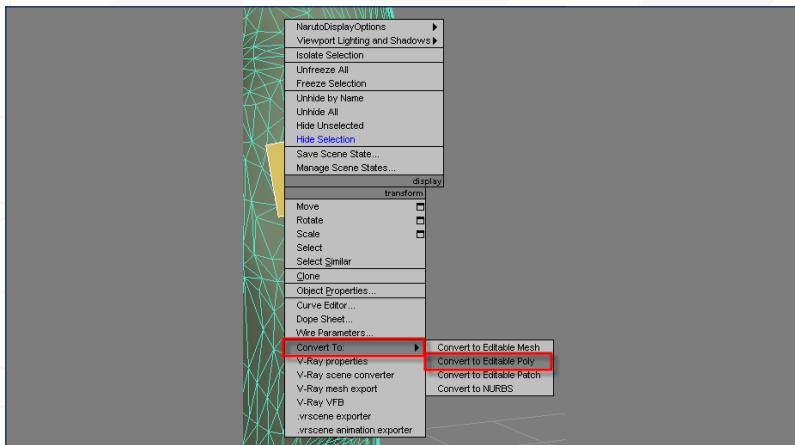


Fig 13

13. We are going to extrude edges to create straps so first of all convert the plane to an Editable Poly (Fig.13).

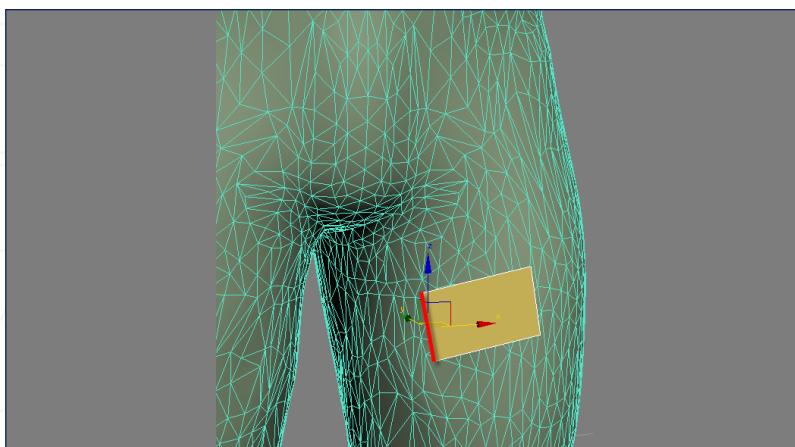


Fig 14

14. Move the edges slightly (Fig.14).

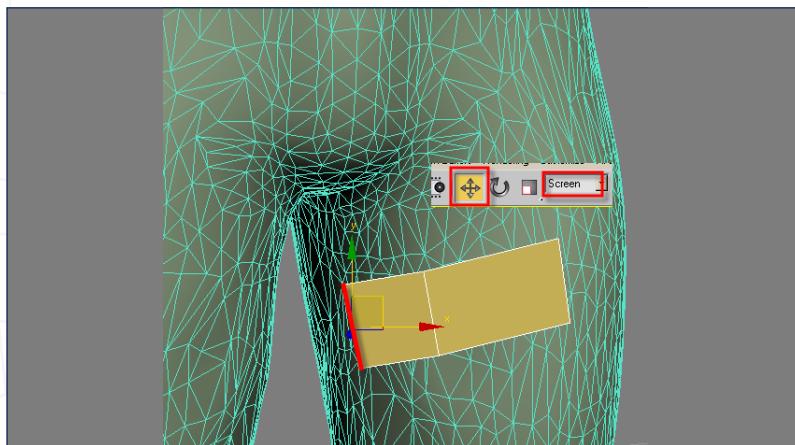


Fig 15

15. By pressing shift, duplicate and move the edge to the left. Repeat this to add further faces around the thigh and create a strap (Fig.15).

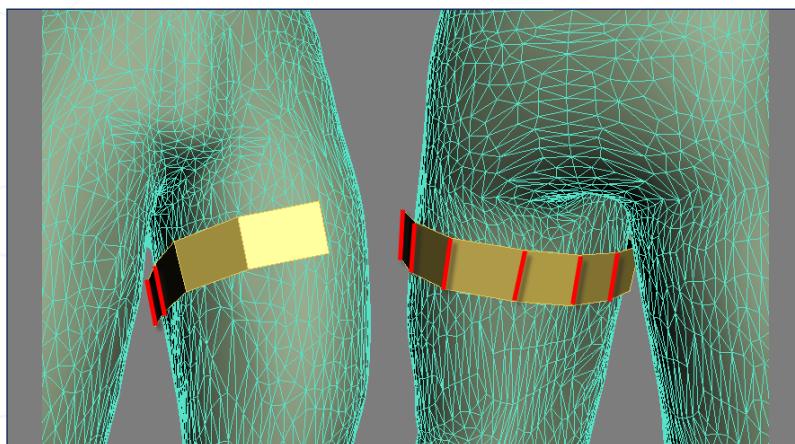
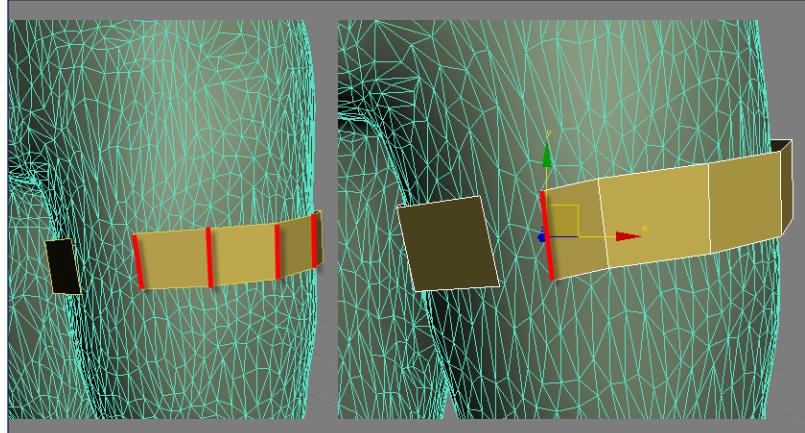


Fig 16a

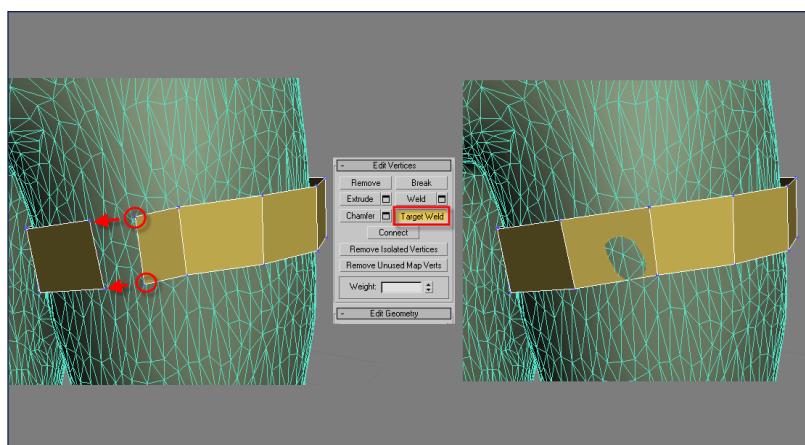
16. Do this several times as shown below (Fig.16a – b).

Fig 16b



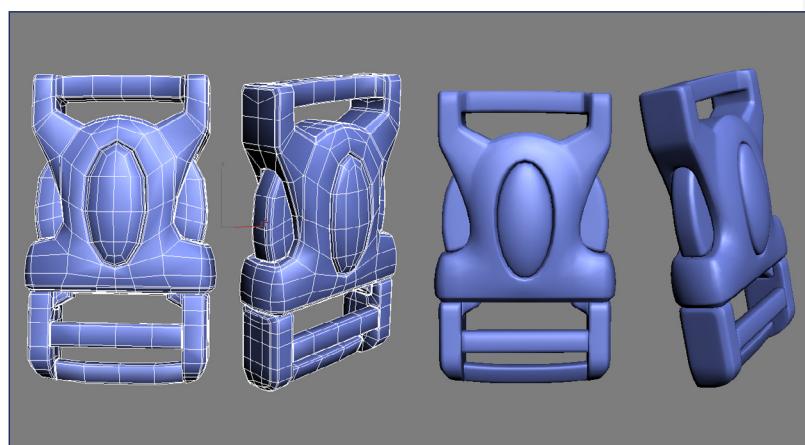
17. Finally weld the vertices as shown below in order to close the Strap (Fig.17).

Fig 17



18. In this chapter, we are going to use some generic objects such as clips. They will be used essentially for straps to add more detail and get a better silhouette (Fig.18).

Fig 18



19. Like the Desert Eagle, another weapon has been made for the left thigh of the character. We are going to place it into its correct position in order to better create the straps. In the last picture, we also moved and duplicated the clips to "attach" the blade onto the pants (Fig.19a – b).

Fig 19a



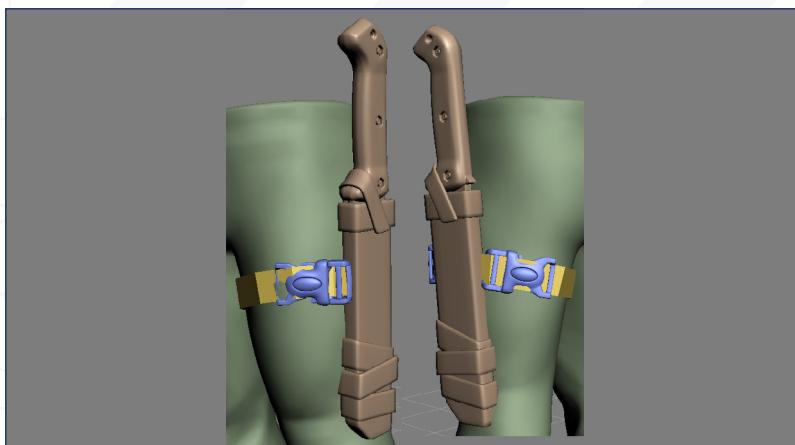


Fig 19b

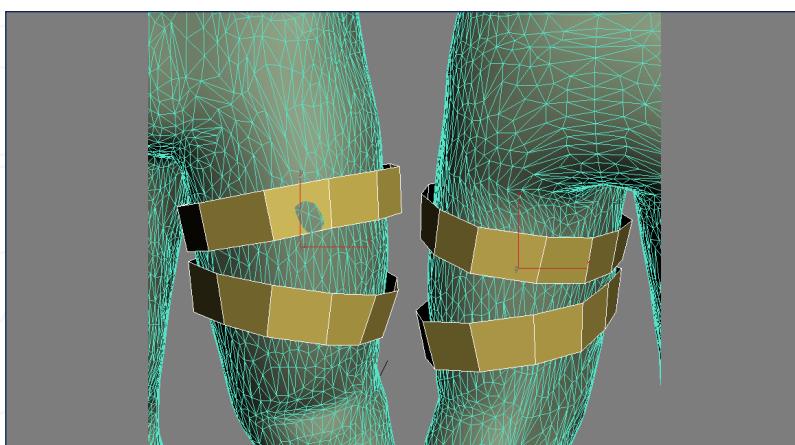


Fig 20a

20. Create another strap below the first one by using the same steps, adding more clips to get the following preview (Fig.20a – b).

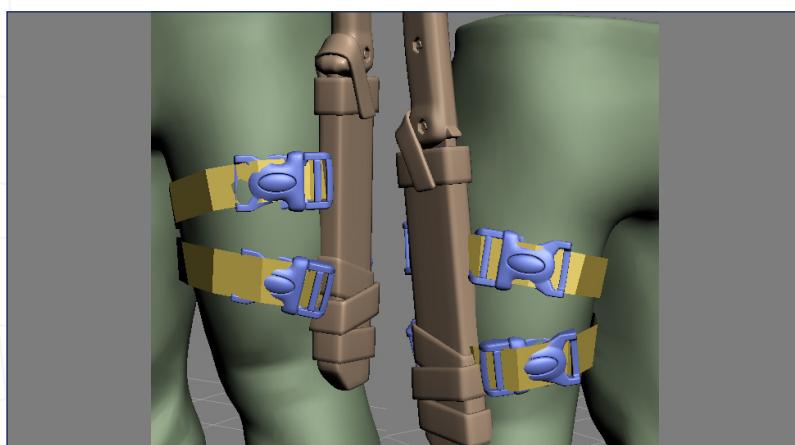


Fig 20b

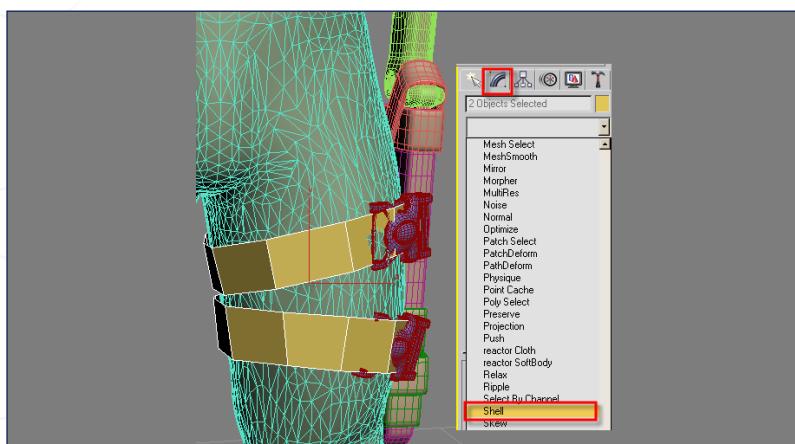
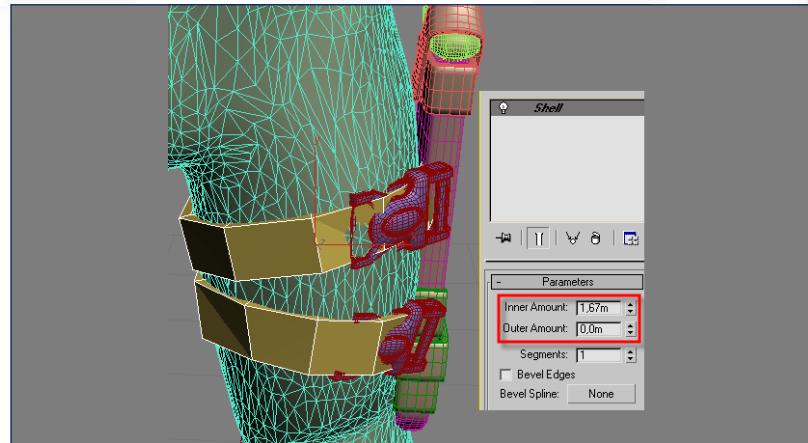


Fig 21

21. We are now going to create some thickness to the straps. Under the Modifier tab, open the roll out and select Shell (Fig.21).

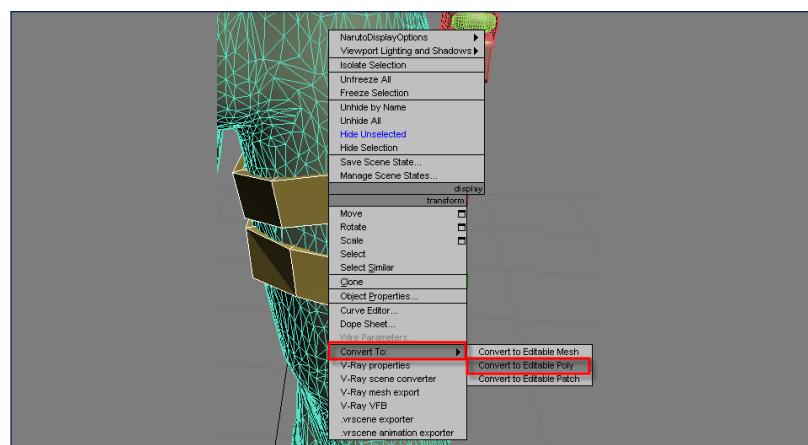
22. It's up to you then to try and choose the best parameters in order to create realistic proportions (Fig.22).

Fig 22



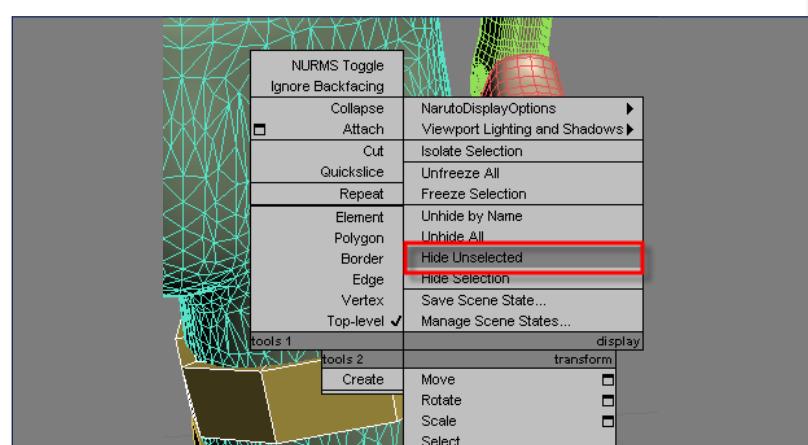
23. Once satisfied, convert both elements to an Editable Poly to collapse the modifier stack and keep it simple (Fig.23).

Fig 23



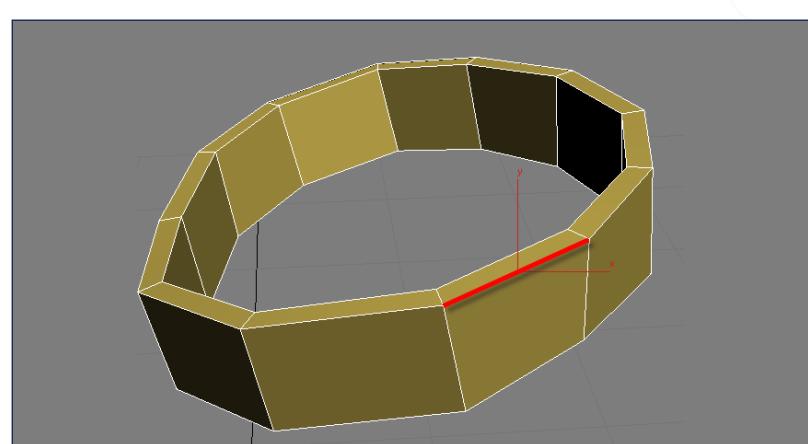
24. We are now going to "prepare" the mesh and so in order to do that hide everything except the strap (Fig.24).

Fig 24



25. Select one edge (Fig.25).

Fig 25



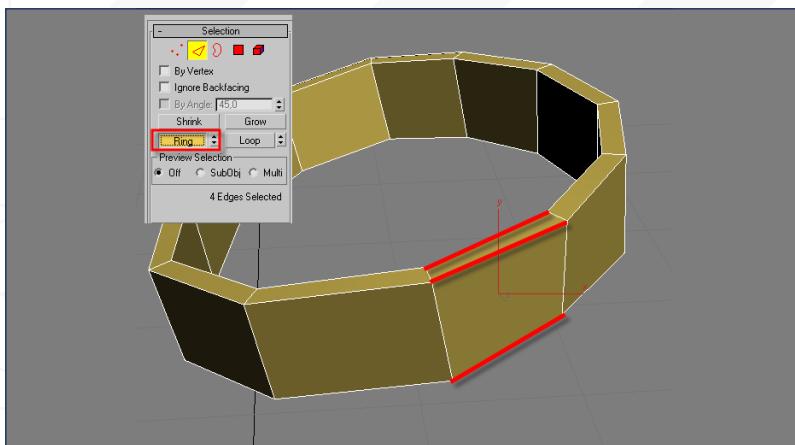


Fig 26

26. Press on Ring to select the ring loop (Fig.26).

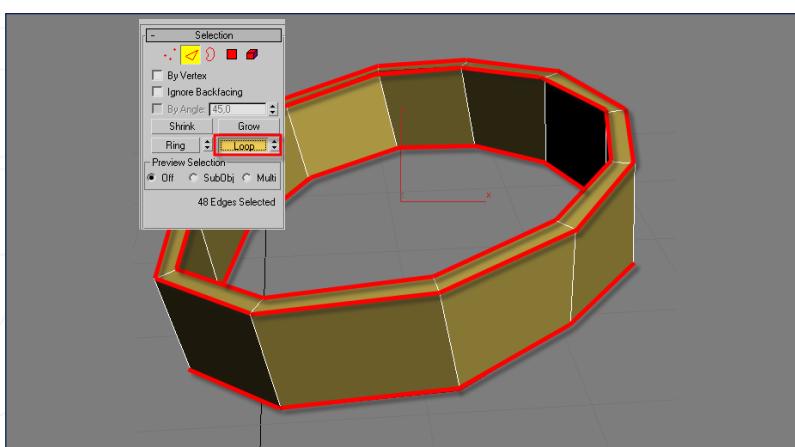


Fig 27

27. Now click on Loop to select the corresponding edge loops (Fig.27).

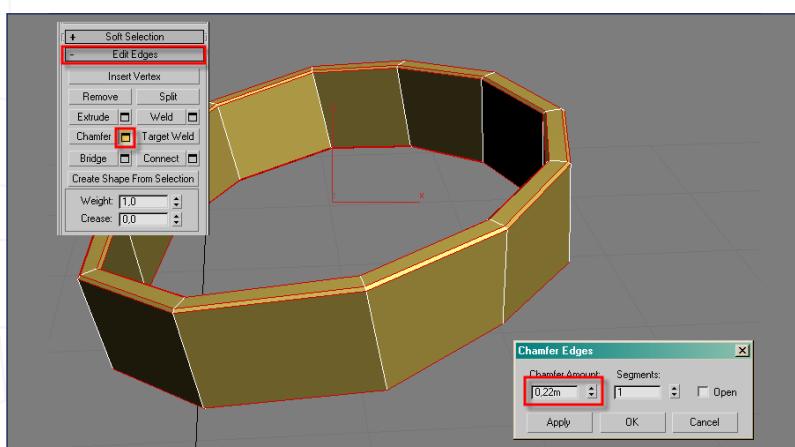


Fig 28

28. Now you can chamfer the edge loops in order to get sharper angles when you have to sculpt the strap within Zbrush where it will be much easier to achieve a better result (Fig.28).

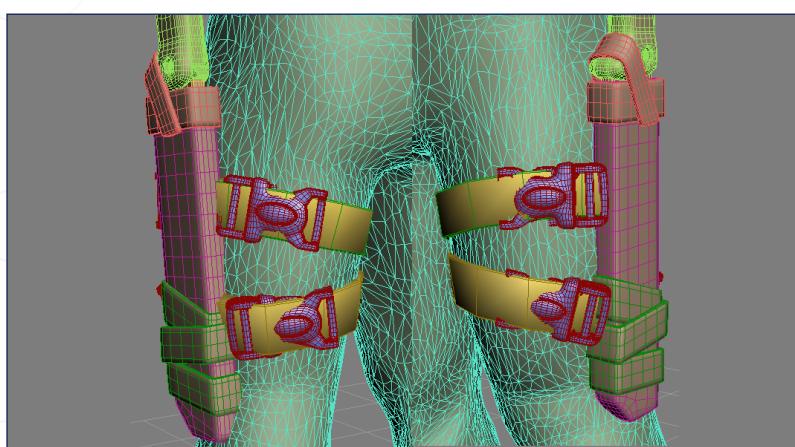


Fig 29

29. Apply this to the second one below. Here is a current preview (Fig.29).

30. Here is another preview without the wire (Fig.30).

Fig 30



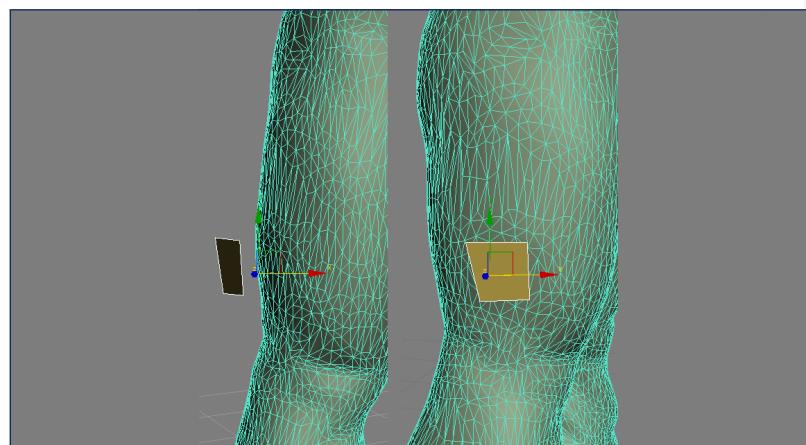
31. It's now the time to re-use the Desert Eagle you created previously as we are going to create a holster for it (Fig.31).

Fig 31



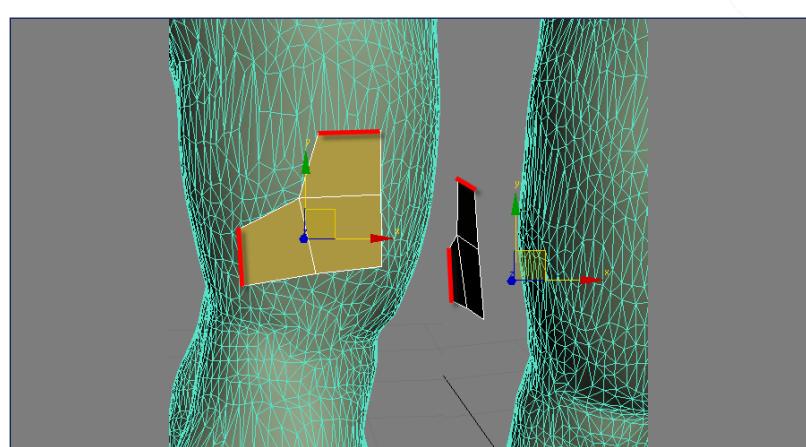
32. As we did with the straps above, use the same technique to create the holster, edge by edge (Fig.32).

Fig 32



33. Extrude the edges as shown below (Fig.33a - b).

Fig 33a



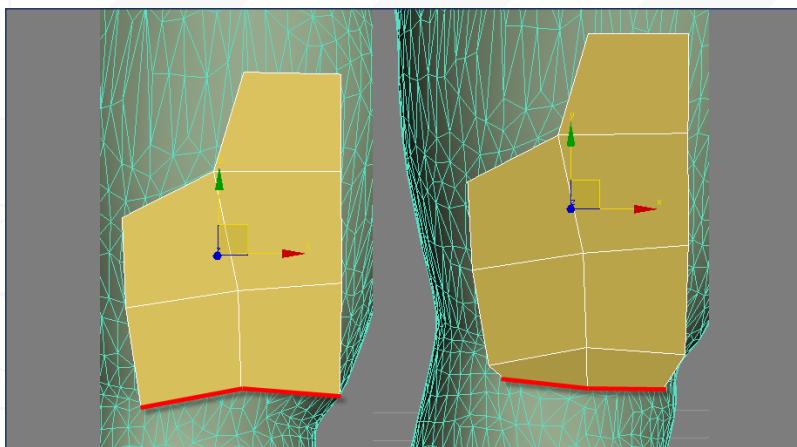


Fig 33b

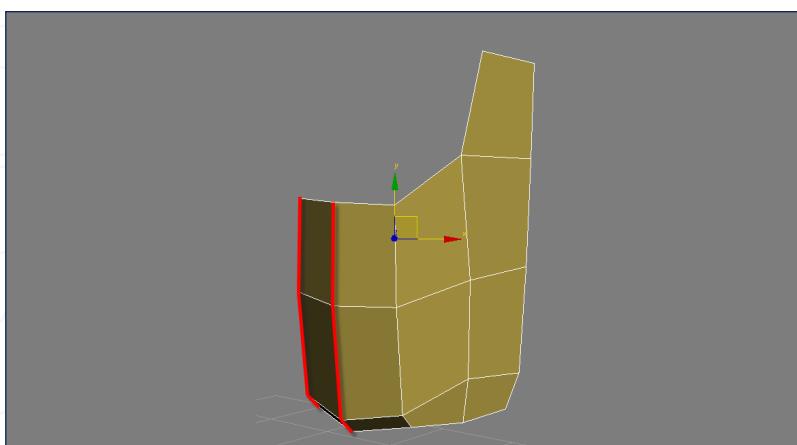


Fig 34

34. Don't hesitate to hide everything except the current object in order to see what you are doing. Continue to extrude the edges by pressing shift (Fig.34).



Fig 35

35. Here is a current preview from several angles (Fig.35).

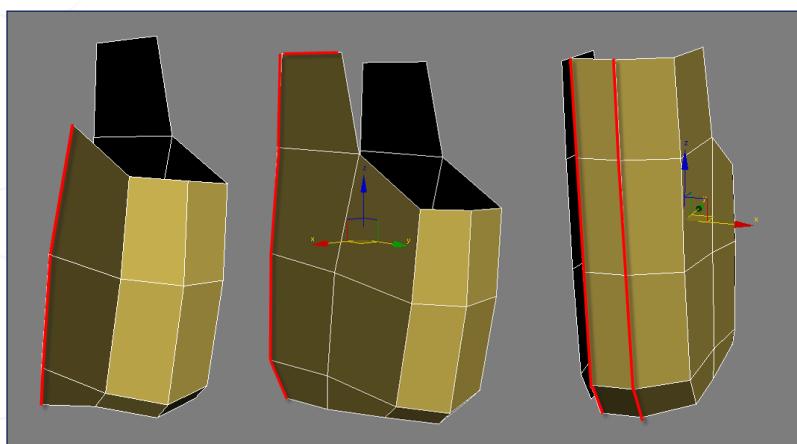
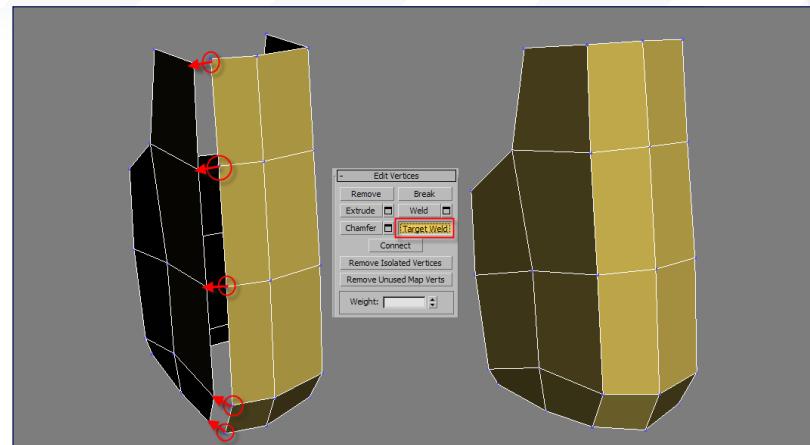


Fig 36

36. Extrude the edges step by step (Fig.36).

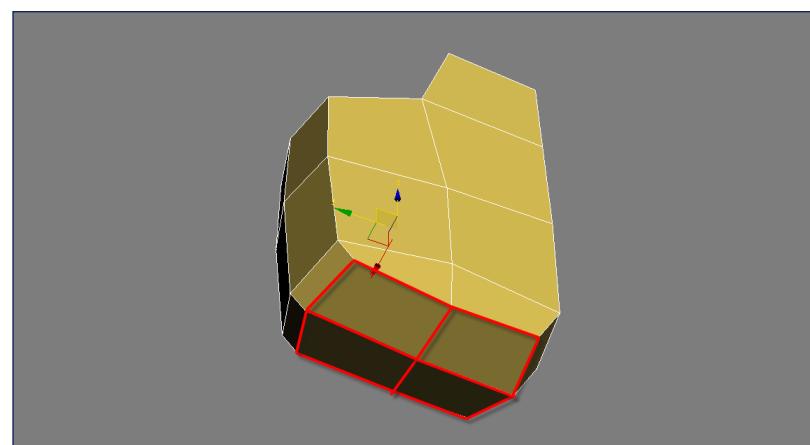
37. In order to “close” the mesh, use the Target Weld Function to snap and weld corresponding vertices (Fig.37).

Fig 37



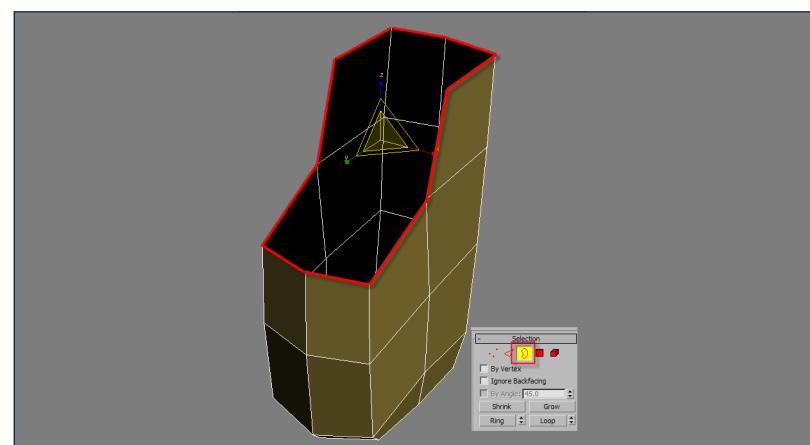
38. Cap the bottom but don't forget it's important to keep the mesh as quads as this will remove any bugs and artifacts in ZBrush (Fig.38).

Fig 38



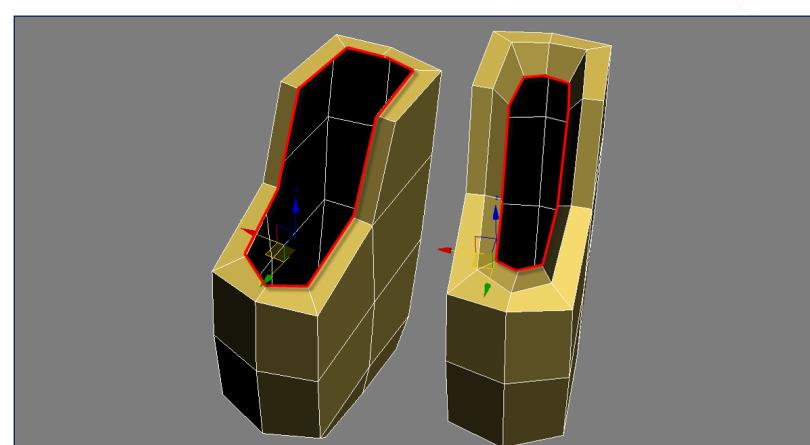
39. Follow the same procedure on the top. Select all the edges by using the Border selection mode (Fig.39).

Fig 39



40. Whilst pressing shift, extrude the border and scale it down (Fig.40).

Fig 40



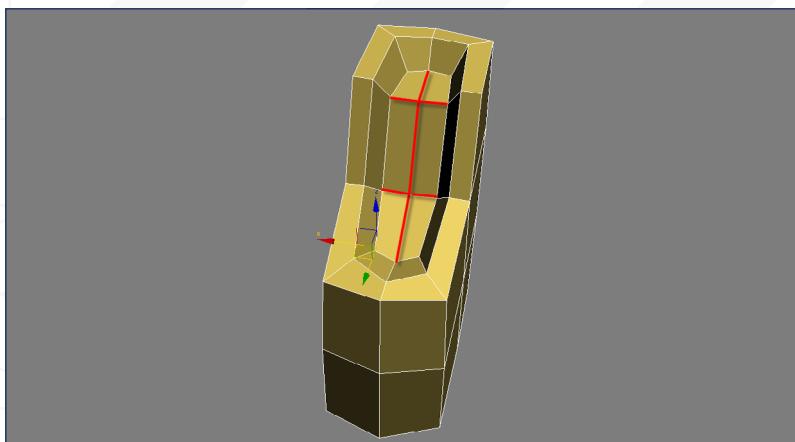


Fig 41

41. Once done close it properly with quads (Fig.41).

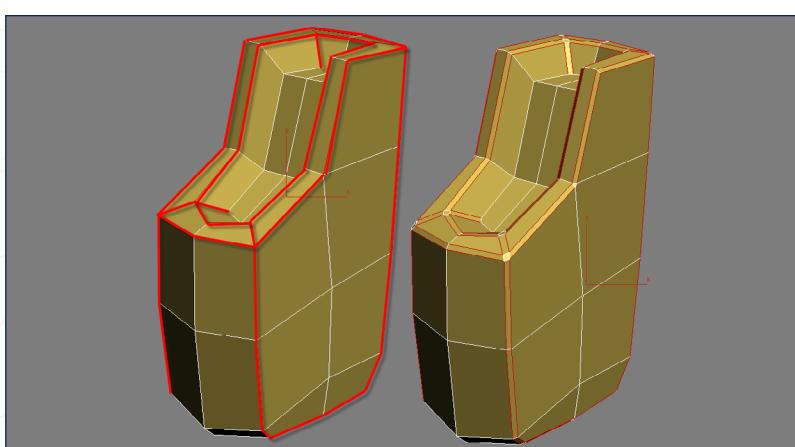


Fig 42

42. As we did for the straps, we are going to sharpen some edges to simplify the work in Zbrush.

Select the edges as shown below (Fig.42).

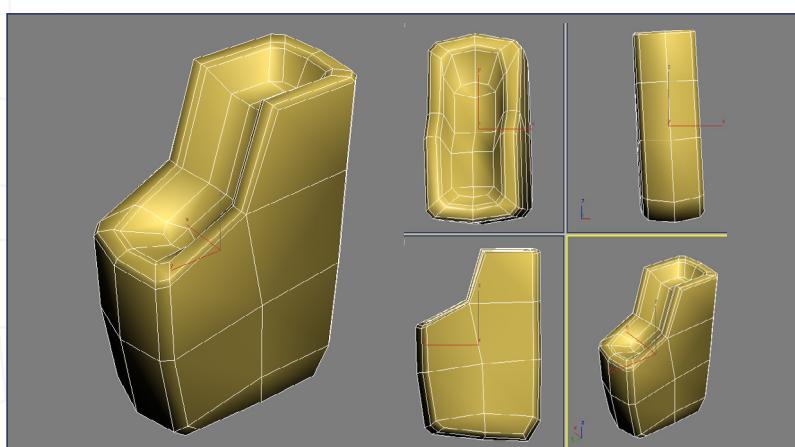


Fig 43

43. Here are some other previews from several angles (Fig.43).

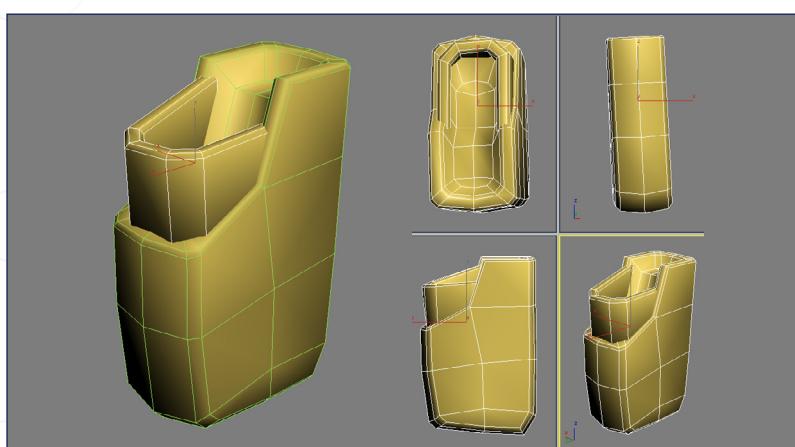
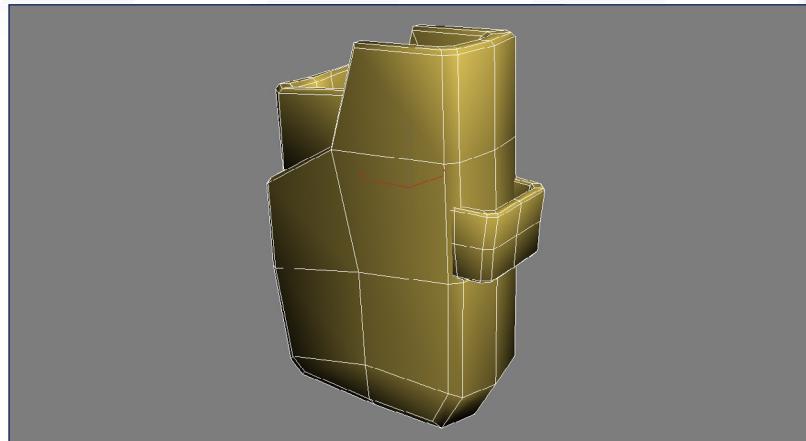


Fig 44

44. Add a mini strap using the same technique as shown below (Fig.44).

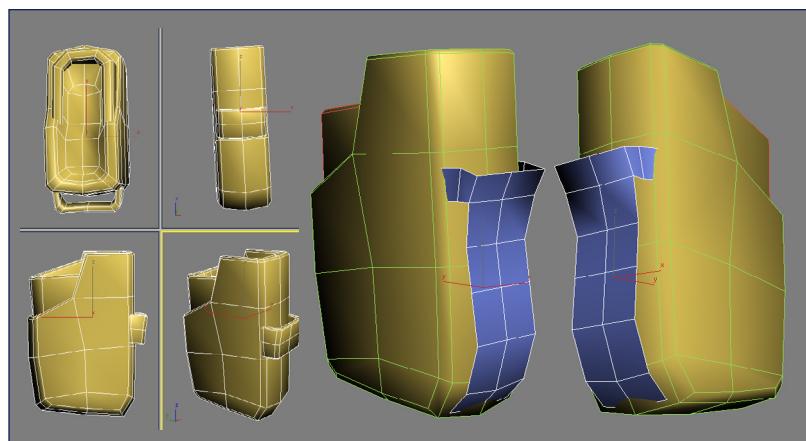
45. An a further one on the side (Fig.45).

Fig 45



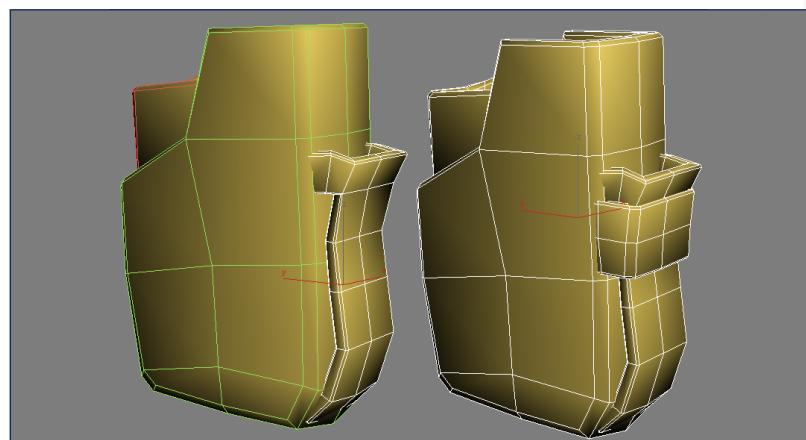
46. We are going to create more elements in order to add extra detail. Usually it's better to have one object with several sub objects rather than a complete mesh entirely sculpted (Fig.46).

Fig 46



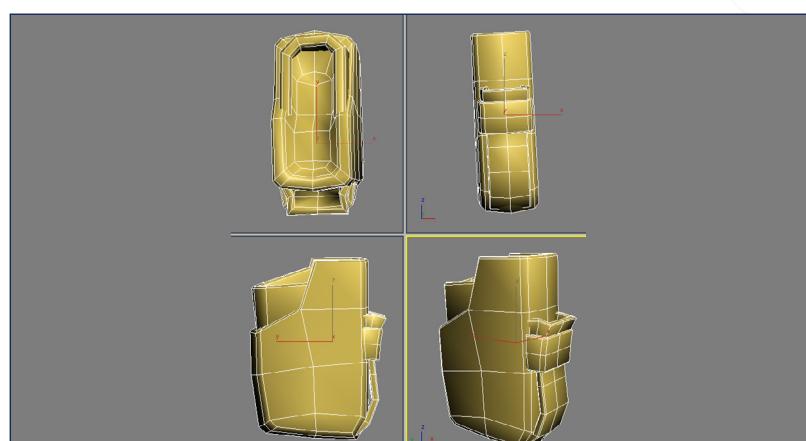
47. Use the same procedure as we have done previously (Fig.47).

Fig 47



48. Here are some more views to show the main shape and silhouette (Fig.48).

Fig 48



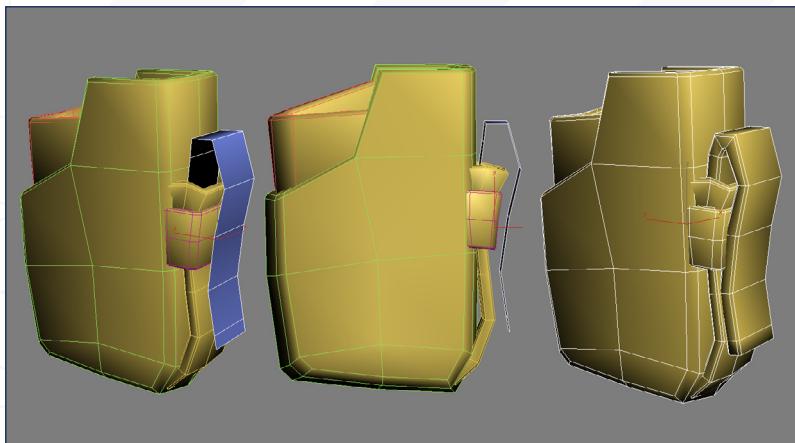


Fig 49a

49. Don't hesitate to look at references for the details with Google often being your best friend. Here is one more strap (Fig.49a – b).

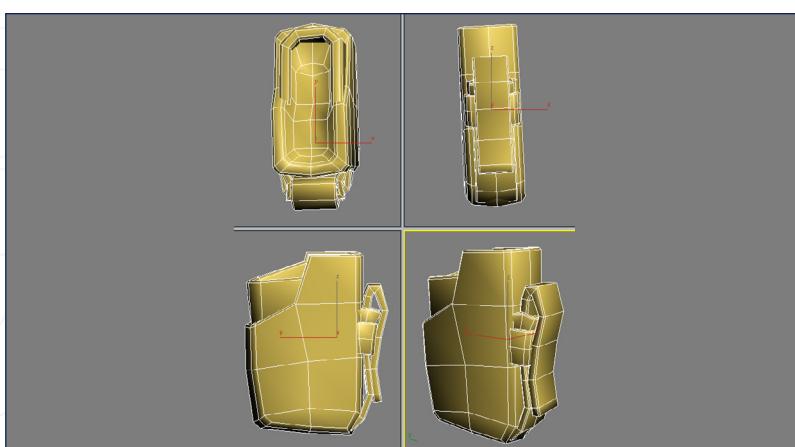


Fig 49b

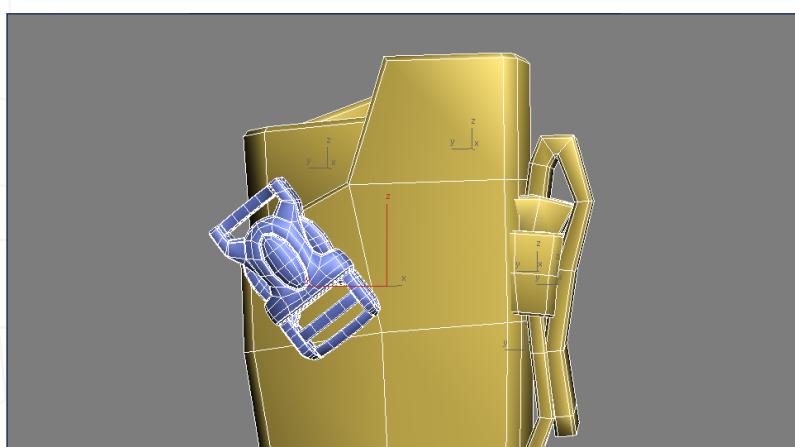


Fig 50

50. Feel free to re-use the clips (Fig.50).

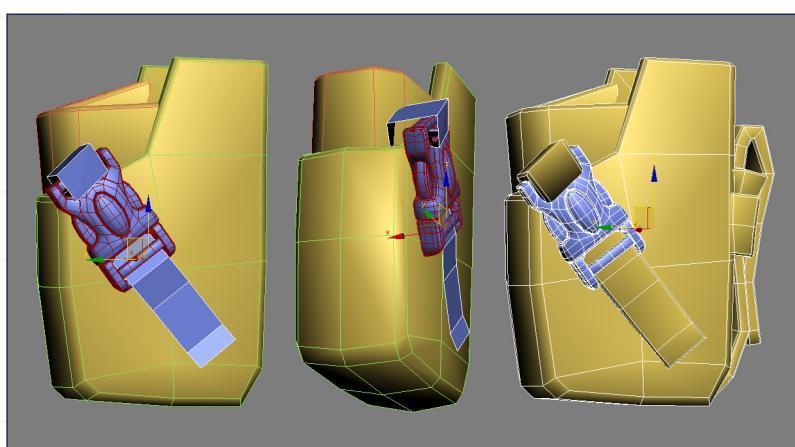


Fig 51a

51. Here are a few more images to show the extra straps (Fig.51a – c).

Fig 51b

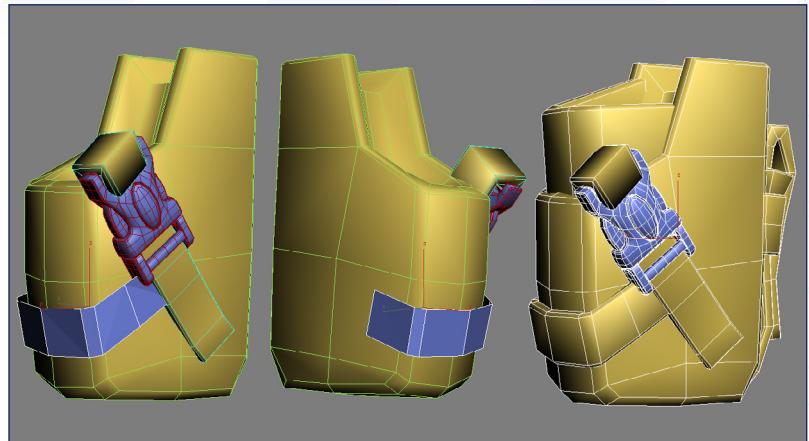
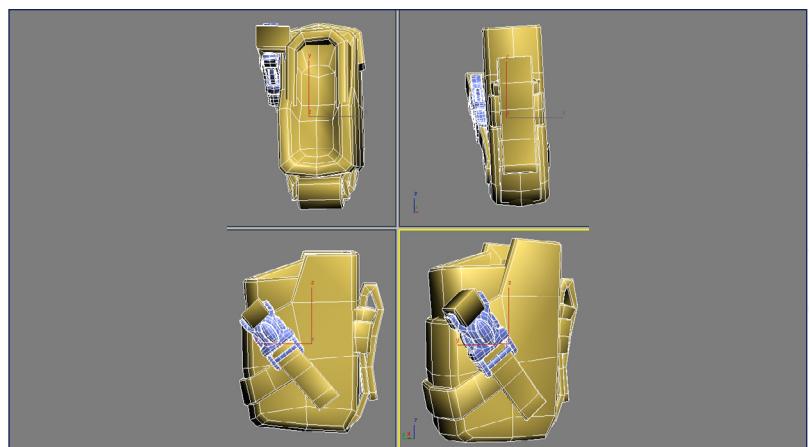
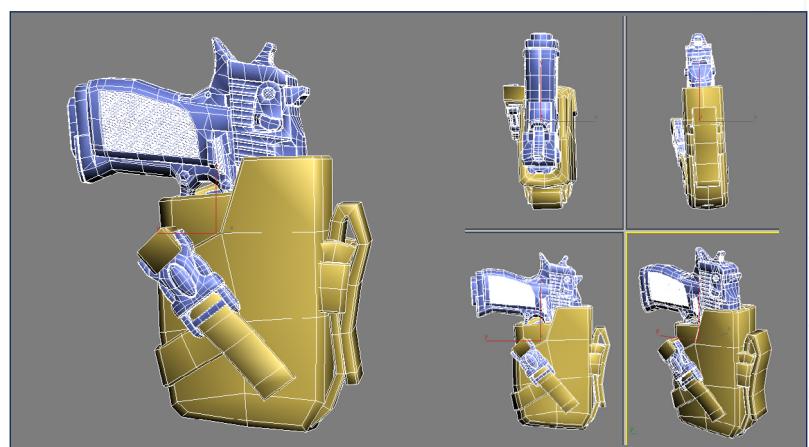


Fig 51c



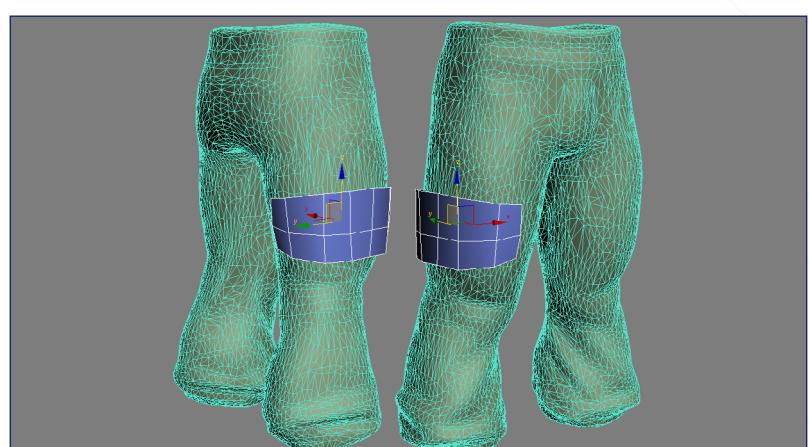
52. You have now your holster where you can house your weapon (Fig.52).

Fig 52



53. Let's add some more accessories on the thigh to accommodate the holster and also add more definition (Fig.53).

Fig 53



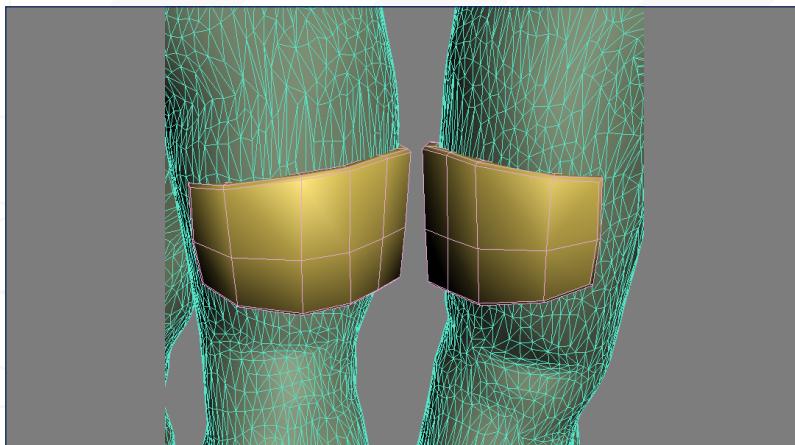


Fig 54

54. Use the same procedure as before to add thickness and prepare it for sculpting (Fig.54).

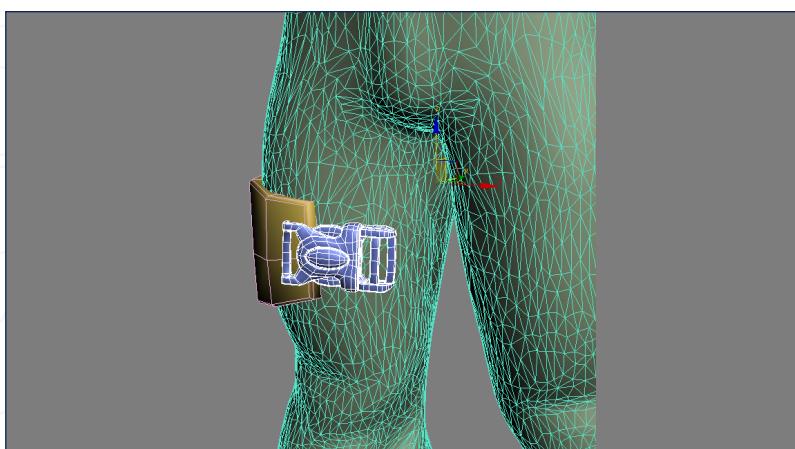


Fig 55

55. Add some more clips in order to house a new strap which will support the holster (Fig.55).

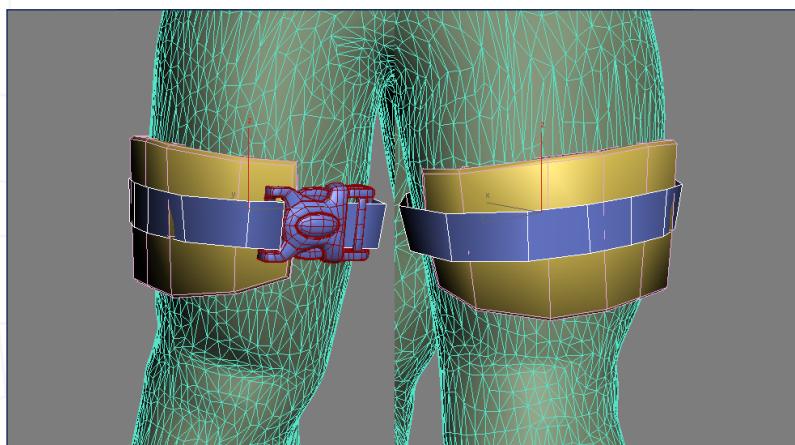


Fig 56a

56. You can now go on and create the strap from a simple plane. In the second picture you can see a preview from the back (Fig.56a – b).

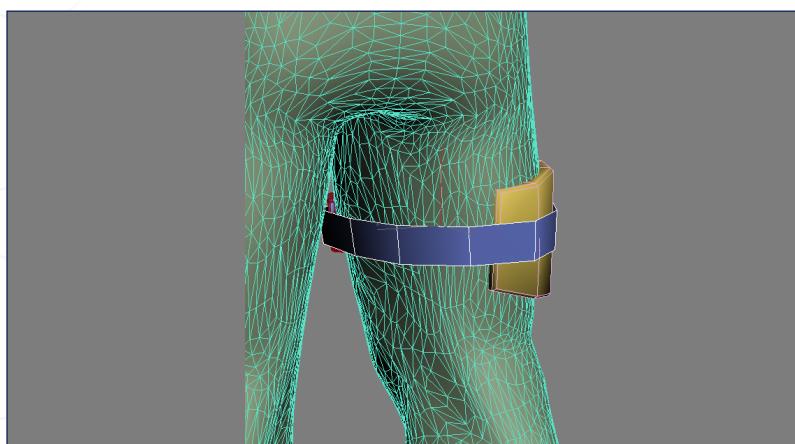


Fig 56b

57. Here is a preview of all the current accessories present on the right thigh (Fig.57a - b).

Fig 57a

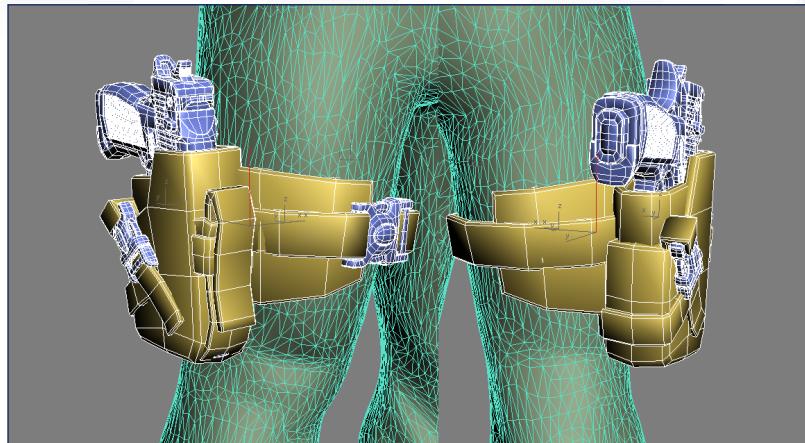
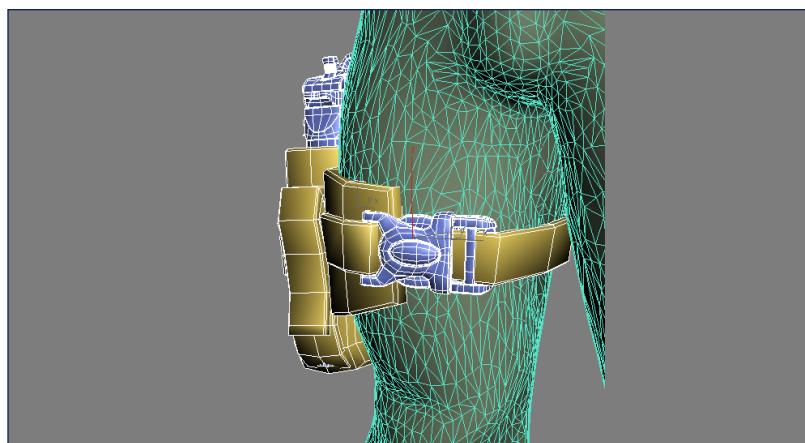


Fig 57b



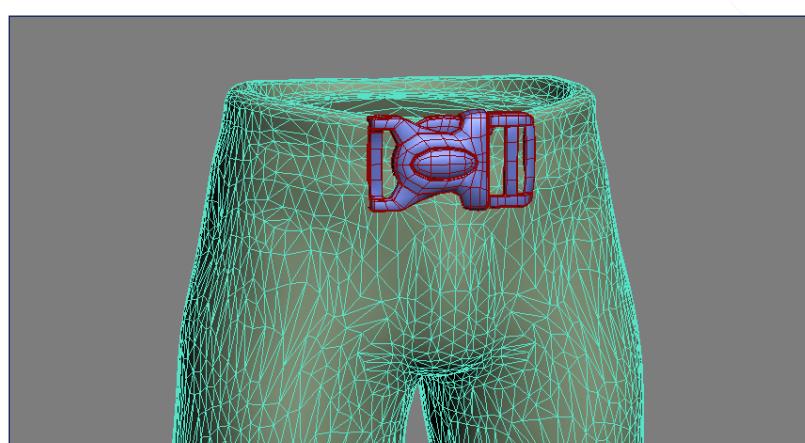
58. Here are all the newly created accessories (Fig.58).

Fig 58



59. With these components done it's time now to work on the belt area. First duplicate the standard clip and position it at the top (Fig.59).

Fig 59



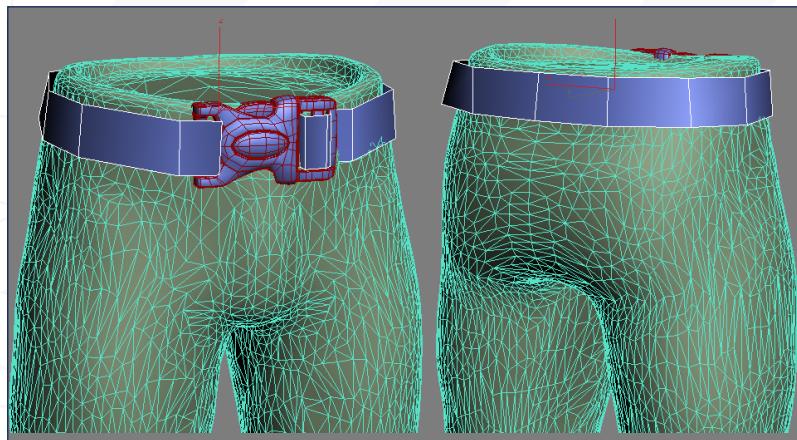


Fig 60a

60. Thanks to this clip, you can figure out the placement of the main strap and add its thickness (Fig.60a – b).

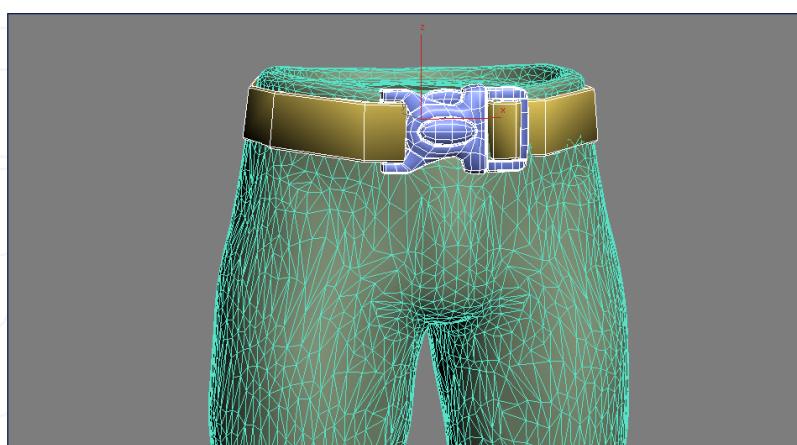


Fig 60b

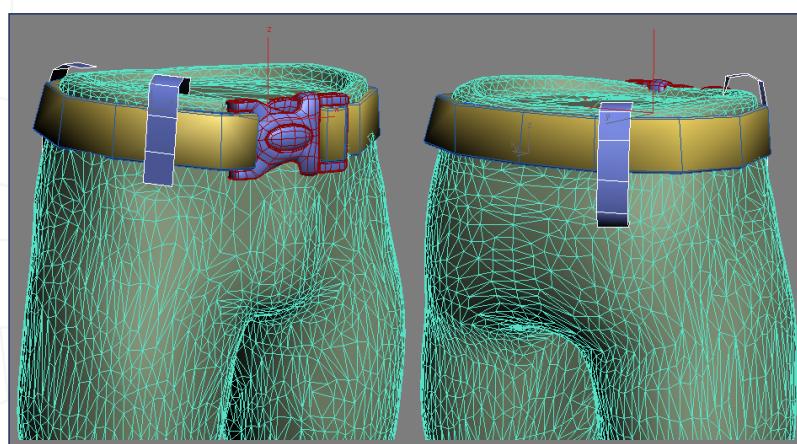


Fig 61a

61. Now it's time to create the small pieces of cloth to support the main strap as seen commonly on a pair of jeans. Once again, apply the thickness modifier and chamfer the edges (Fig.61a – b).

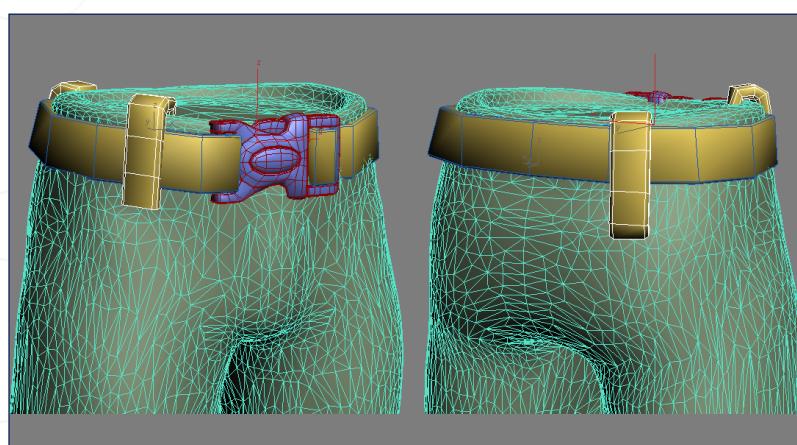
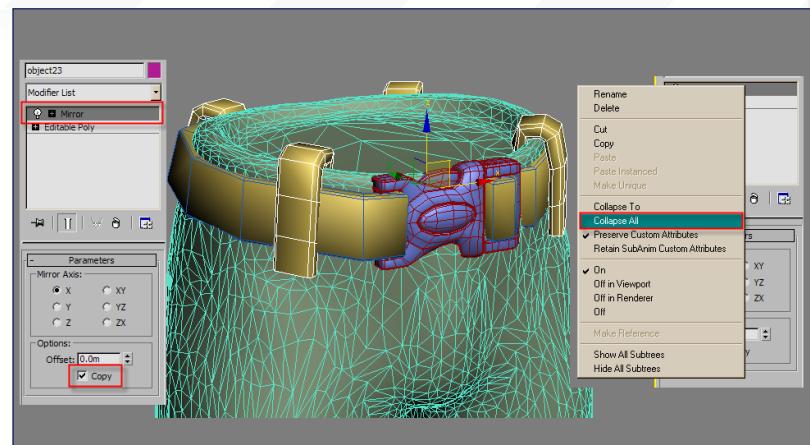


Fig 61b

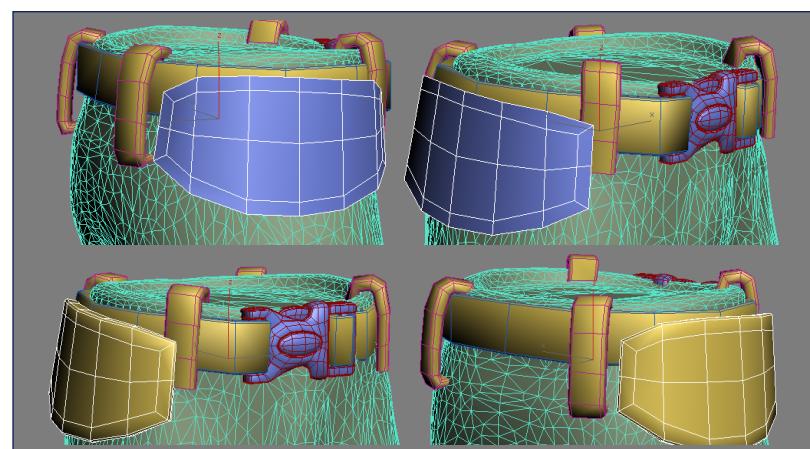
62. To make the new objects symmetrical, apply the Mirror modifier as shown below (Fig.62).

Fig 62



63. Create another piece which will essentially protect the upper thigh area (Fig.63).

Fig 63



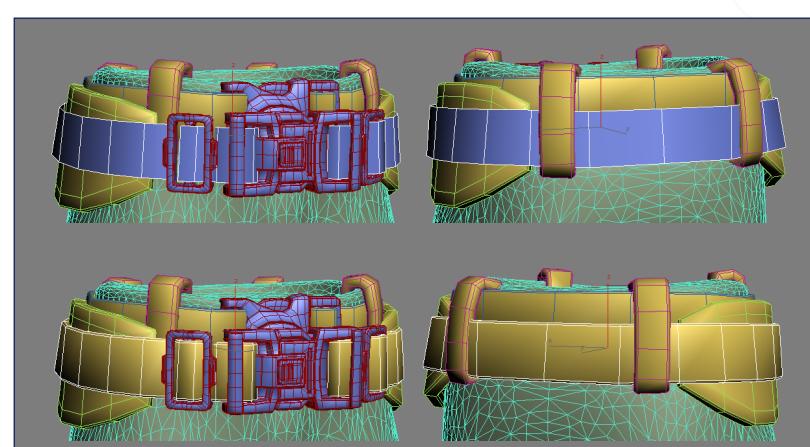
64. Place on some more accessories to prepare for another strap (Fig.64).

Fig 64



65. Create this strap/belt and finish it correctly (Fig.65).

Fig 65



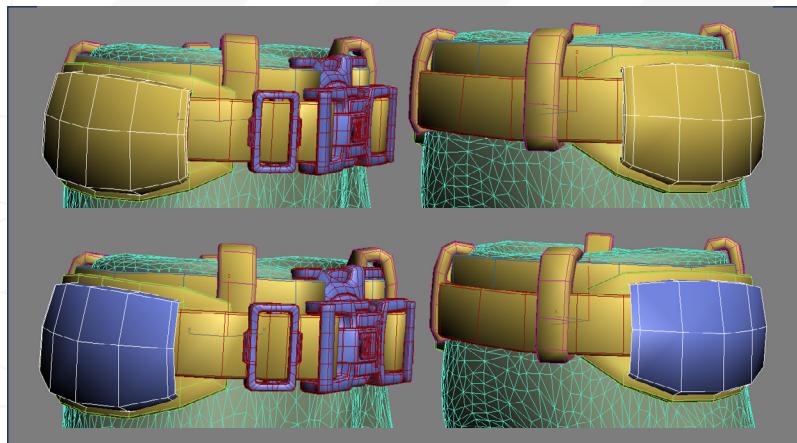


Fig 66

66. You can find some references for these kinds of pieces on American Marines (Fig.66).



Fig 67

67. Here are some other views of the current model (Fig.67).

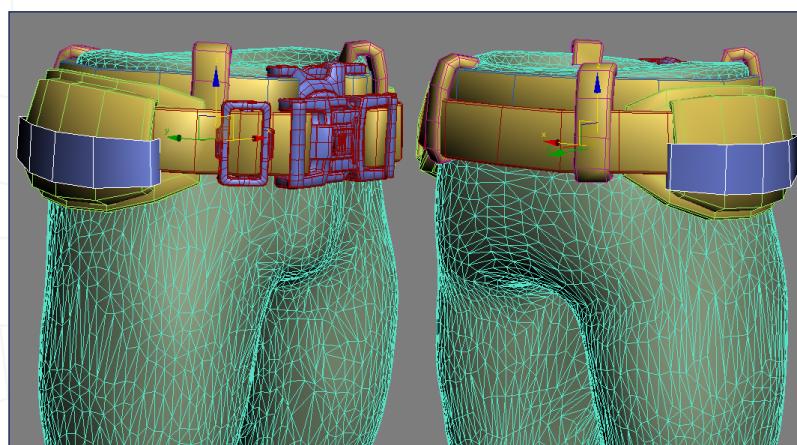


Fig 68a

68. Here is another piece (Fig.68).

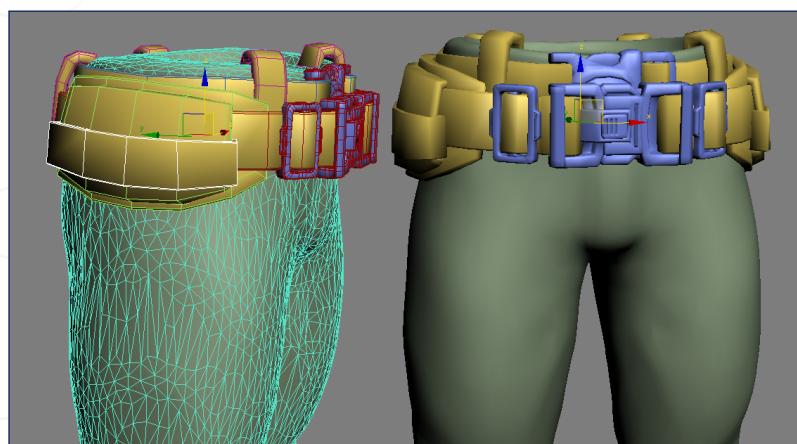


Fig 68b

69. Create one more protective piece, duplicate it to add more detail and then duplicate this double piece and place them at the back (Fig.69a – d).

Fig 69a

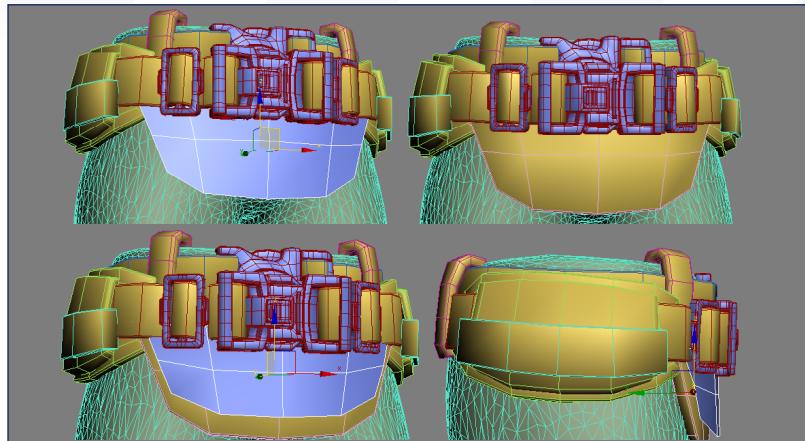


Fig 69b

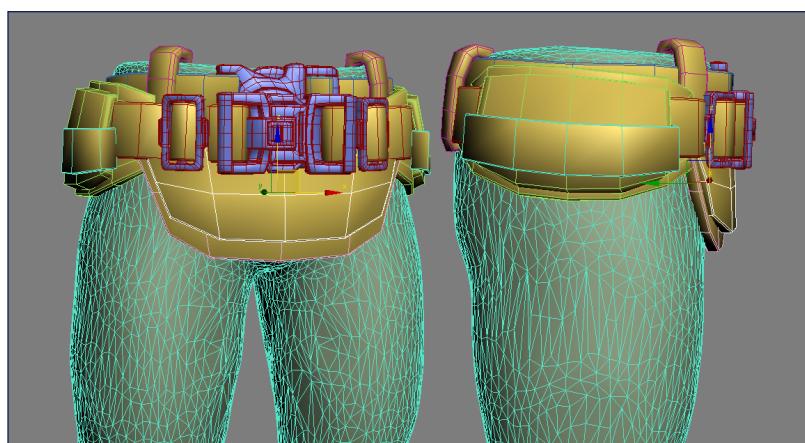


Fig 69c

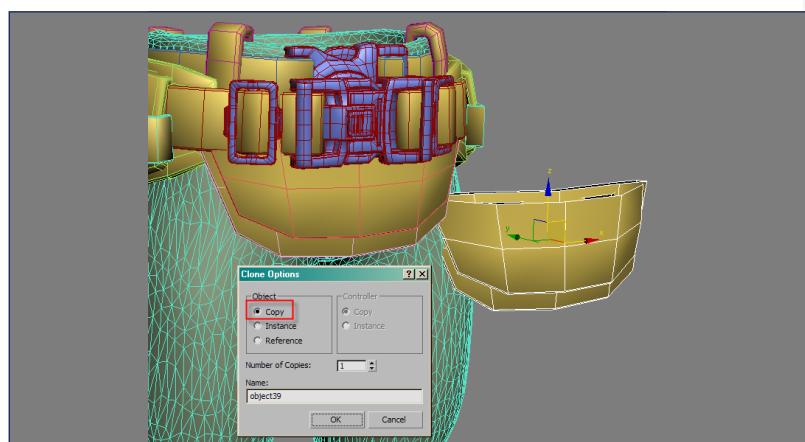


Fig 69d

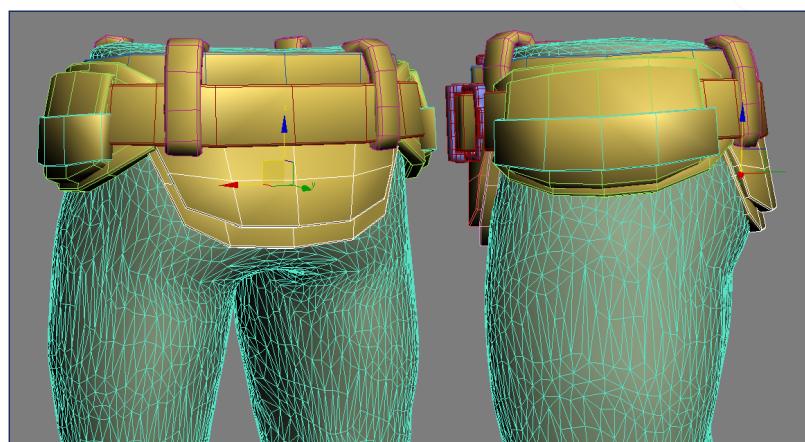




Fig 70

70. Here is a current preview of the model (Fig.70).

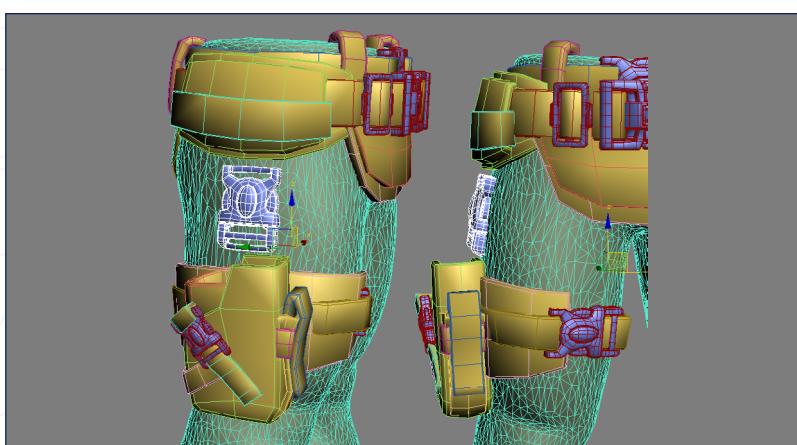


Fig 71a

71. Now let's add some more accessories to the thigh (Fig.71a - c).

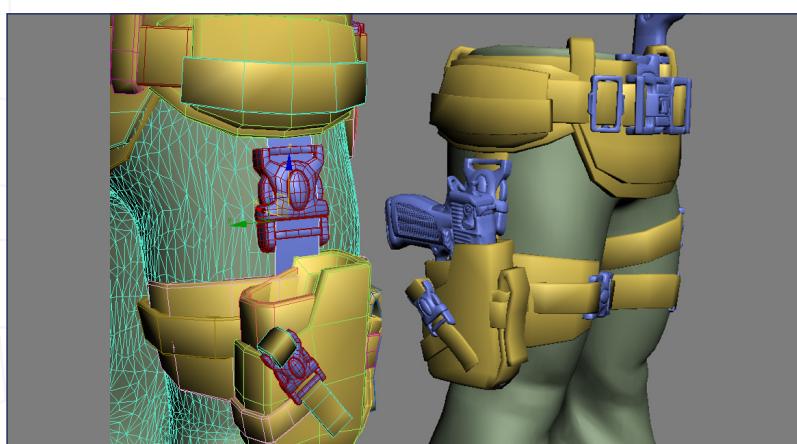


Fig 71b

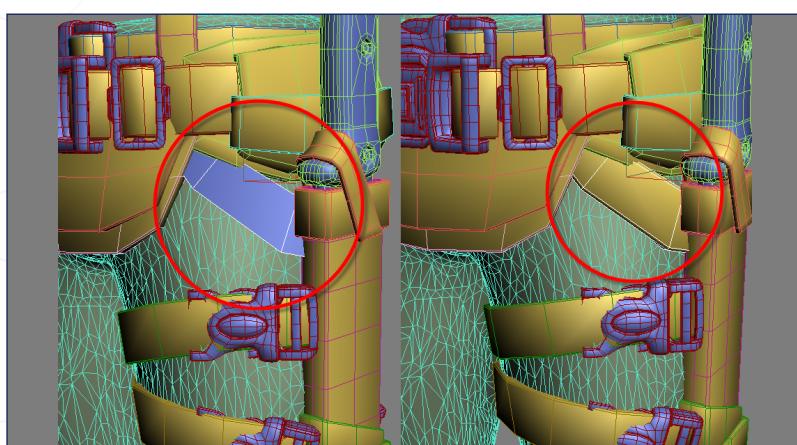
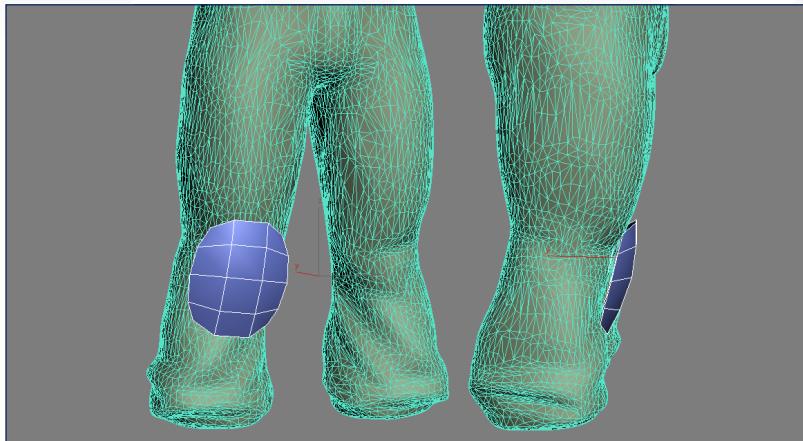


Fig 71c

72. It's now time to work on the knee area by including a knee protector. We will use the same technique as followed previously (Fig.72).

Fig 72



73. More clips will be added to accommodate the accessories. In the second picture you can see some more previews (Fig.73a – b).

Fig 73a

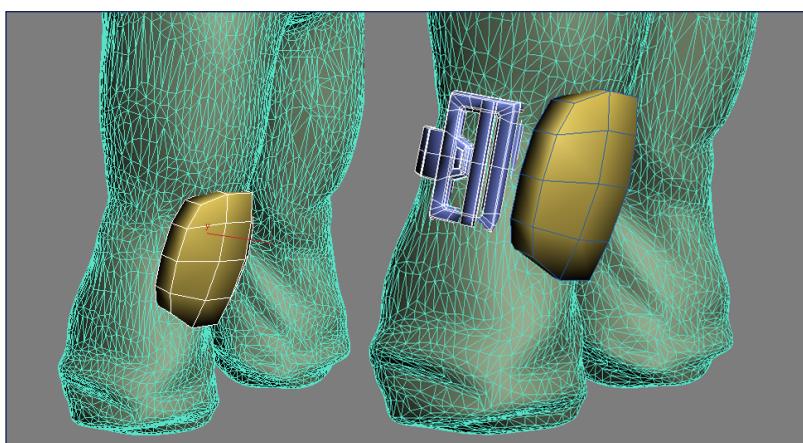
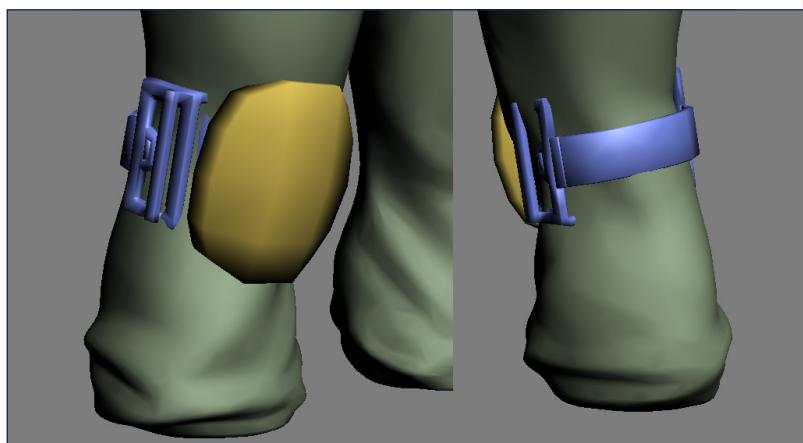
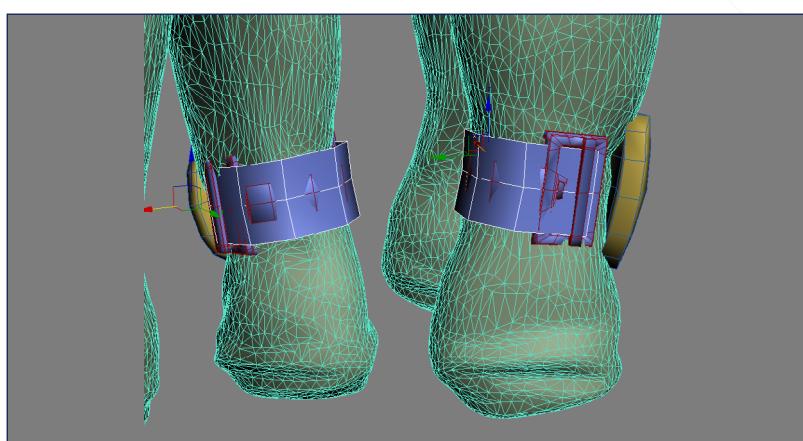


Fig 73b



74. Its time now to fix the knee protector in place with a new strap. Extrude it around the knee and join the ends (Fig.74).

Fig 74



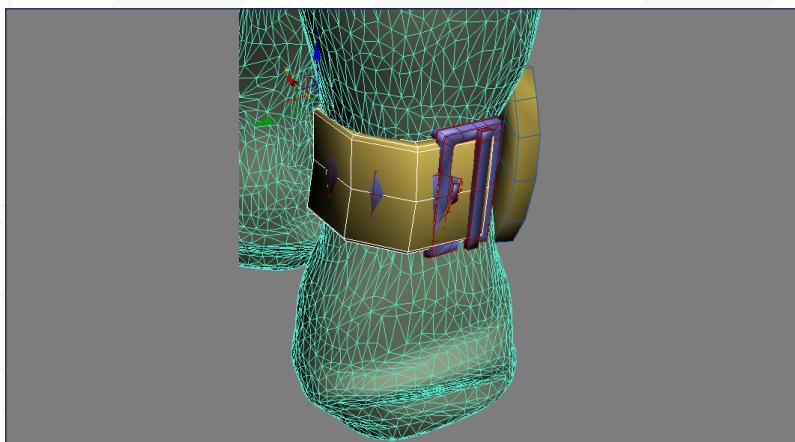


Fig 75

75. Next add some thickness (Fig.75).

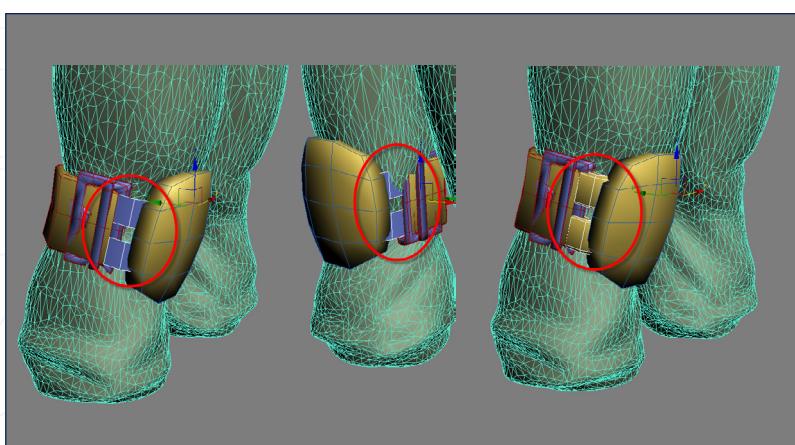


Fig 76

76. Create some small straps to link the knee protector to the clips and once again add some thickness (Fig.76).

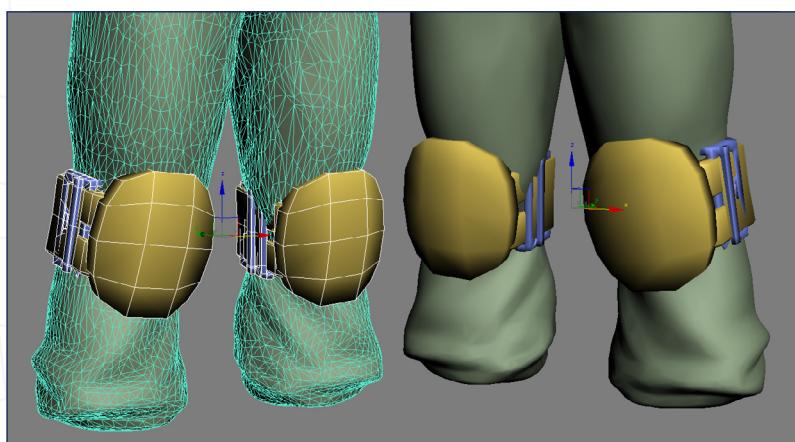


Fig 77

77. Here is a current preview from different angles (Fig.77).

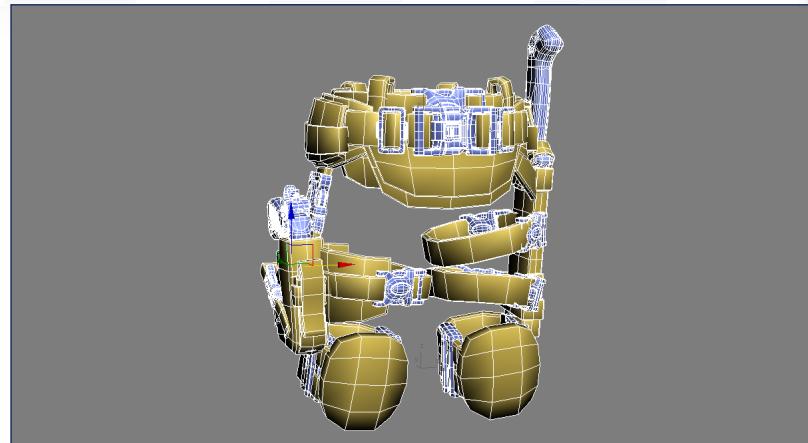


Fig 78

78. Here is a final preview of all the accessories (Fig.78).

79. Export only the newly created accessories as .obj files from 3ds max. We will import these later into Zbrush to be sculpted (Fig.79).

Fig 79



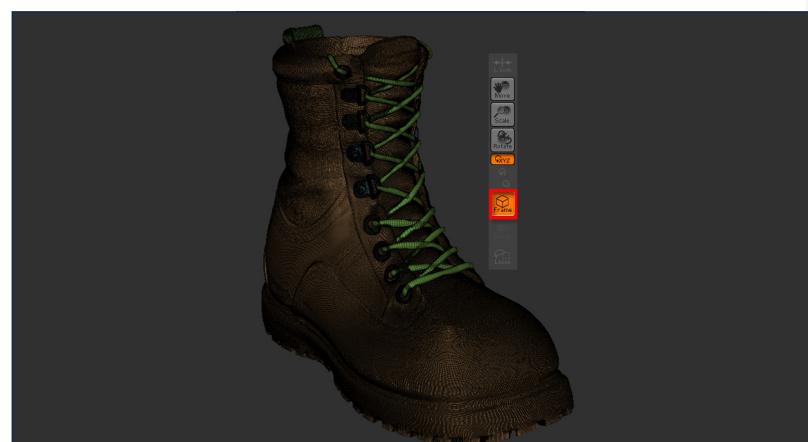
80. Open up your Zbrush shoe file. We are going to use the main shoe object as a reference in the pants Zbrush file to help sculpt the pants and accessories (Fig.80).

Fig 80



81. Click on the Frame button on the right and you will see several colors appear on the shoe that correspond to the different objects. We just need the biggest one without the laces and everything else (Fig.81).

Fig 81



82. Now click on GrpSplit in the SubTool Tab and you will see more Subtools appear in the list. You can now delete everything one by one except the first one which corresponds to the main shoe object, as shown on the right (Fig.82).

Fig 82

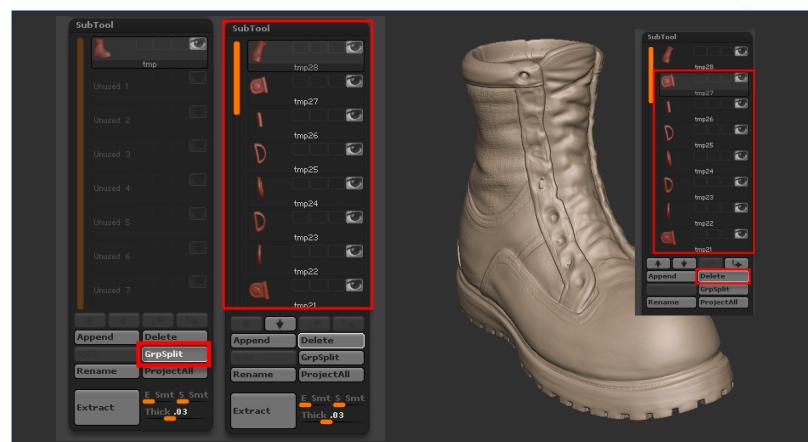




Fig 83

83. You now have only one Subtool in the list and you will notice that this element has lost its subdivision history. Subdivision history is really important if you want to save memory and be able to sculpt smoothly. To recover subdivisions just press on Reconstruct Subdiv several times. As long as we just need a reference of the shoe you could also delete the higher level of subdivision as shown in step 3 (Fig.83).



Fig 84

84. Here is a final preview of the shoe reference. There is just enough to help you when working on the rest of the pants (Fig.84).

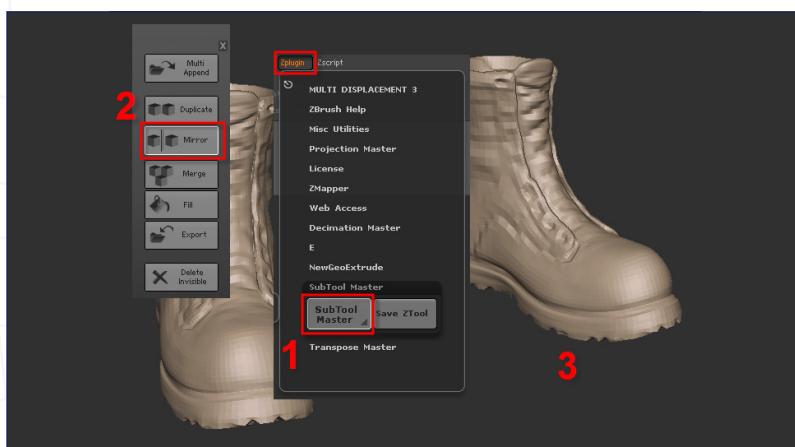


Fig 85

85. Once again use the Plugin SubTool Master to mirror the shoe (Fig.85).

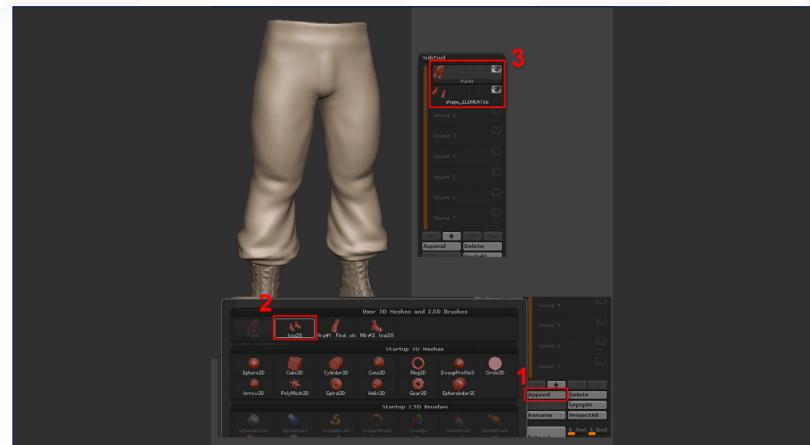


Fig 86

86. Now go back to your simple pants you created at the beginning of this chapter (Fig.86).

87. Append the shoes you just created above (Fig.87).

Fig 87



88. Finally, append the accessories that you created in 3dsmax by using SubTool Master. You should arrive at something close to the second picture (Fig.88a – b).

Fig 88a

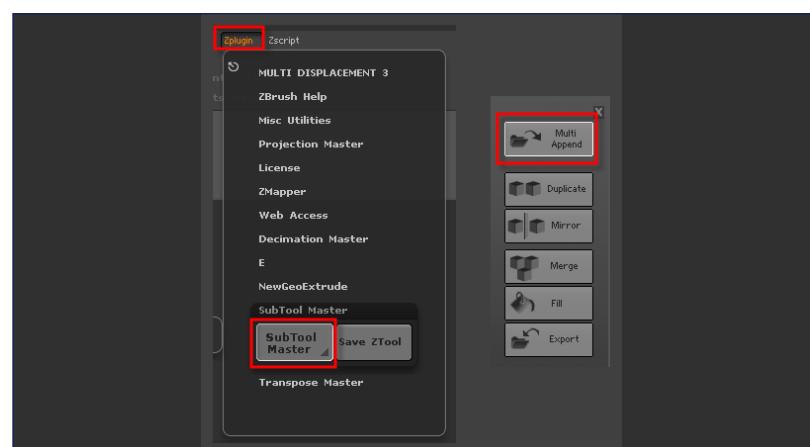
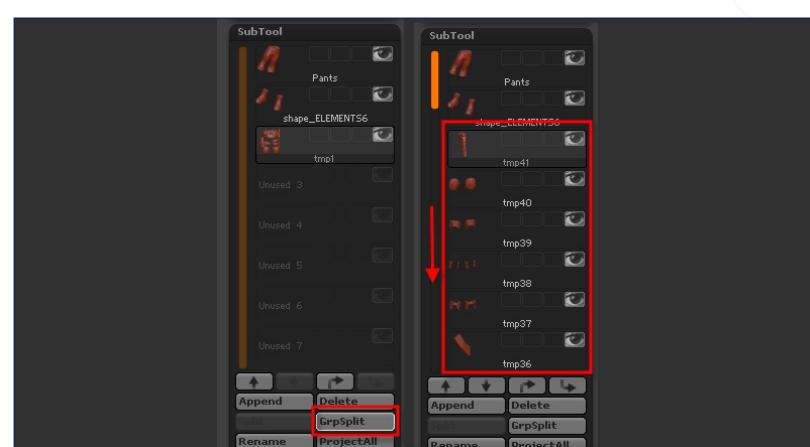


Fig 88b



89. In order to work properly on single elements click on GrpSplit and you should then see many more SubTools appear on the right. It would be easier to work on them one at a time which will also be much better for memory as you could easily end up with over 10 million polygons without any restrictions (Fig.89).

Fig 89



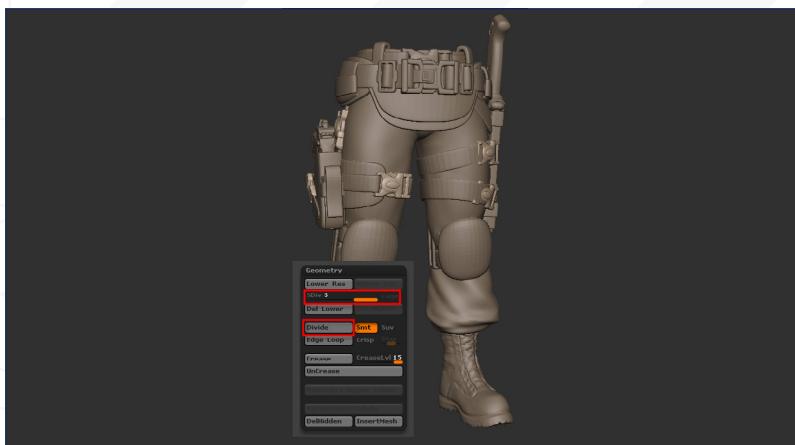


Fig 90

90. You can now add more subdivisions to the objects in preparation for the sculpting (Fig.90).



Fig 91

91. Now let's work on the first element; the pelvic protectors. Before starting do not hesitate to add more subdivisions (Fig.91).



Fig 92

92. To be able to work properly without being disturbed by any other objects you can hide them by simply clicking on the eye button just to the right of your current SubTool (Fig.92).

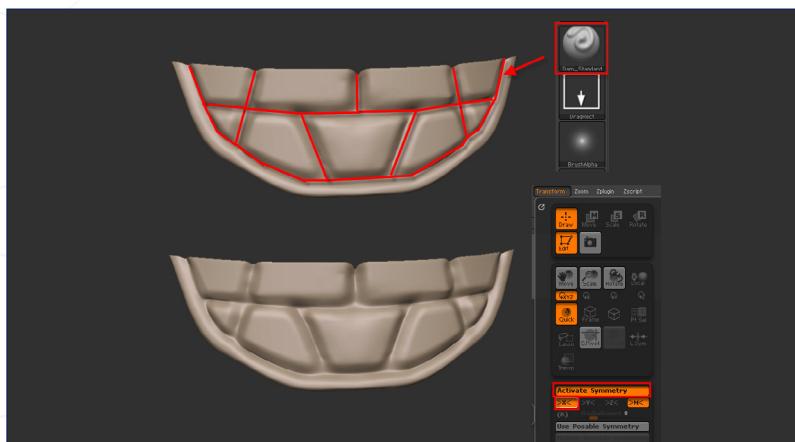
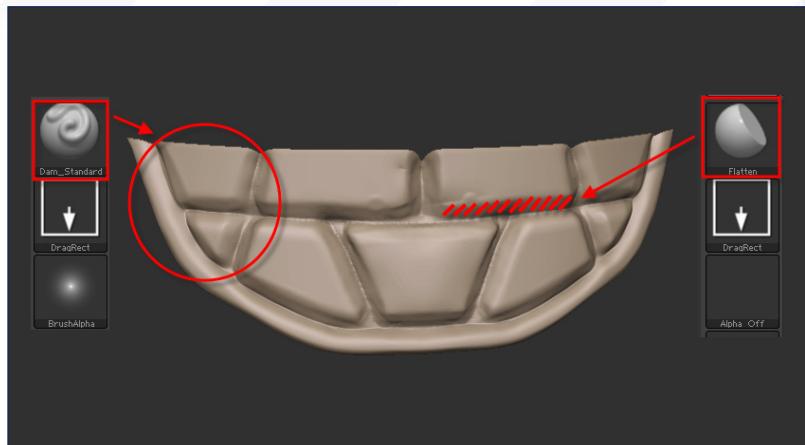


Fig 93

93. Dam Standard will be used once again to "draw" the main lines but don't forget to turn the symmetry on (Fig.93).

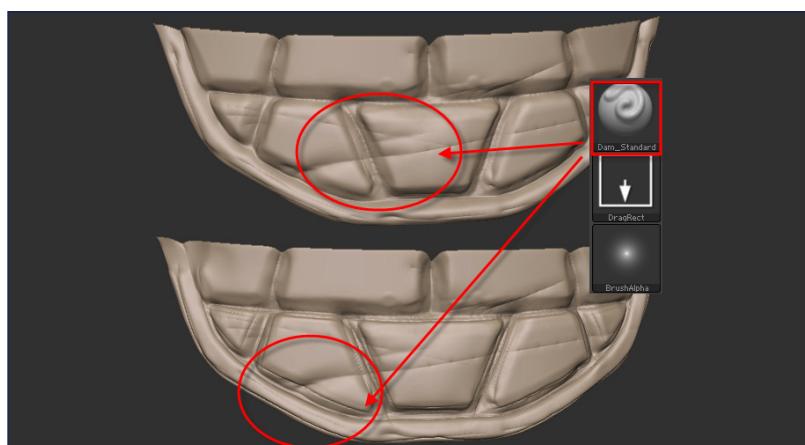
94. Use now the Flatten brush to flatten some areas as shown below and the Dam Standard brush to polish and sharpen any holes and details (Fig.94).

Fig 94



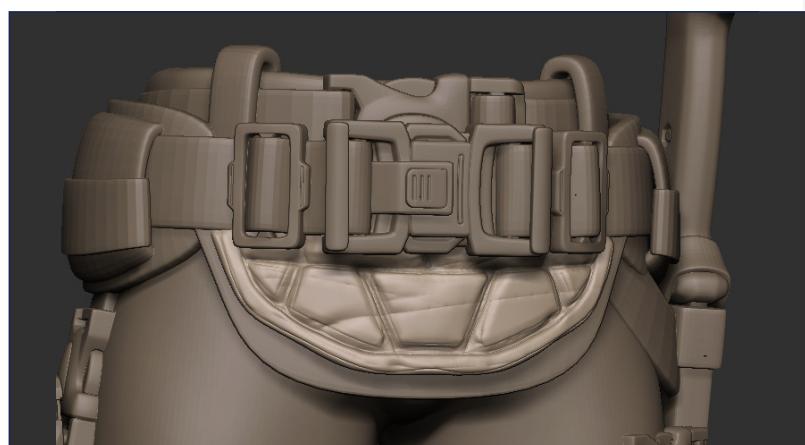
95. For the final scratch touches keep using the Dam Standard brush and draw some natural lines to suggest that the object is actively used (Fig.95).

Fig 95



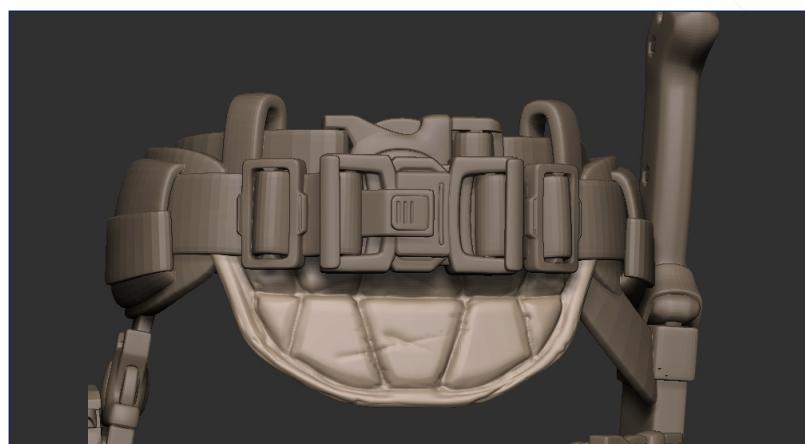
96. Here is a final preview (Fig.96).

Fig 96



97. Follow the same procedure for the pelvic protector situated underneath (Fig.97a – b).

Fig 97a



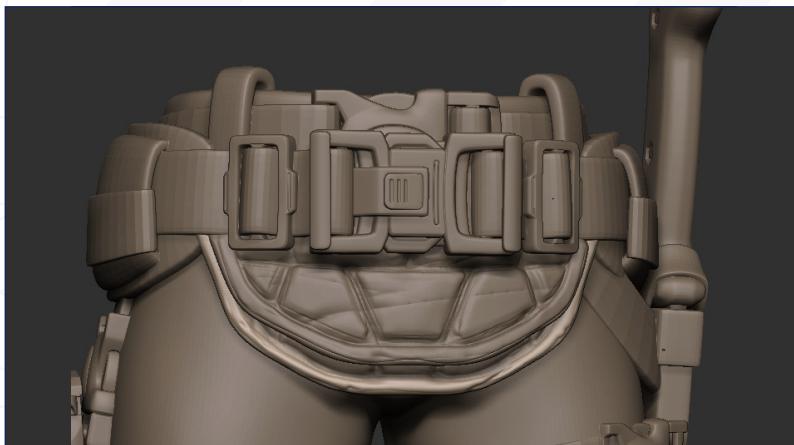


Fig 97b



Fig 98

98. And likewise for the ones at the back (Fig.98).

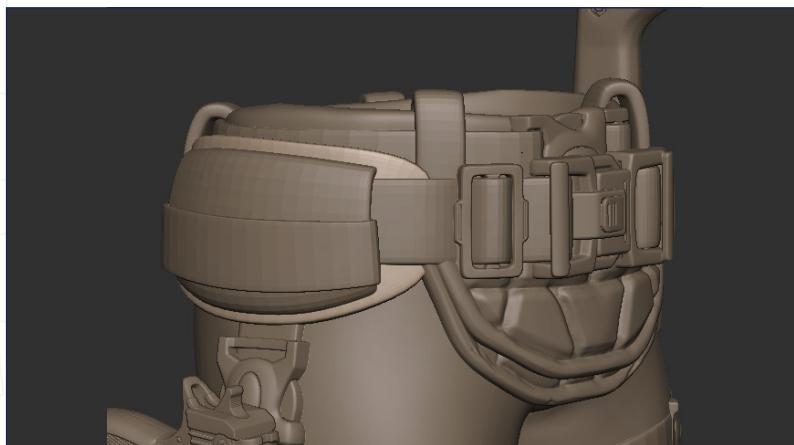


Fig 99

99. Now let's work now on another one as shown below (Fig.99).

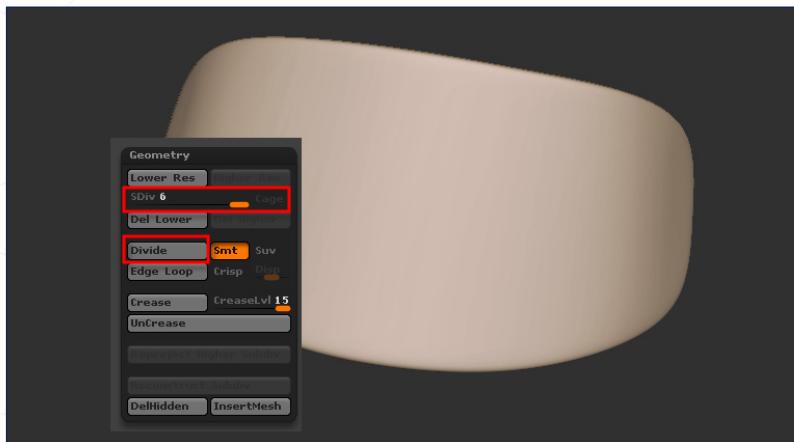
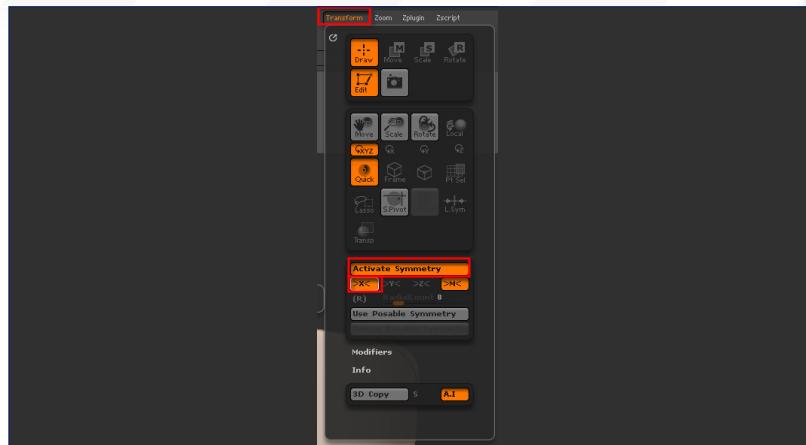


Fig 100

100. First of all subdivide it (Fig.100).

101. Don't forget to activate the symmetry – something which has to be done for all the SubTools as it's not a general option (Fig.101).

Fig 101



102. A very nice Brush is the Slash2 and thanks to this you will be able to create extra pieces of cloth apparent on jeans. Select the Slash2 Brush and activate LazyMouse making sure not to forget to change the LazyStep value to 0 in order to get a perfect line. Now right click and move down the Z intensity value to reduce the brush strength. You can now draw a line around your object as shown below (Fig.102).

Fig 102



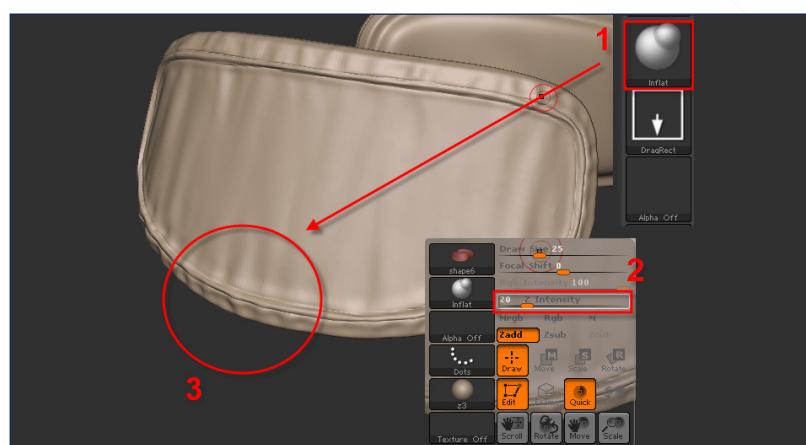
103. Thanks to a customized brush (created by David Giraud), draw another line to simulate the stitches (Fig.103).

Fig 103



104. Now you can use the standard Inflat Brush to add some folds to make the object look a bit more realistic (Fig.104).

Fig 104



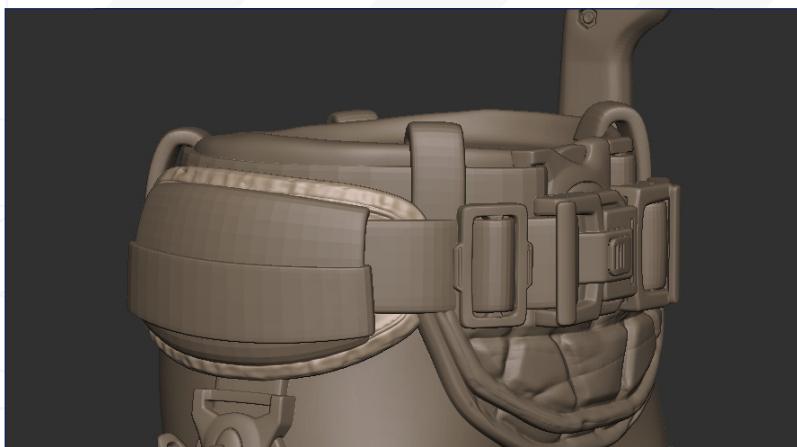


Fig 105

105. Here is a final Preview (Fig.105).

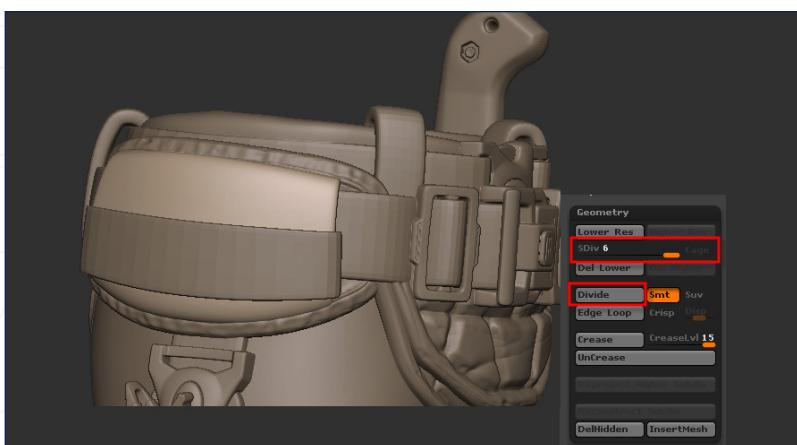


Fig 106

106. Select the object as shown below and subdivide it (Fig.106).

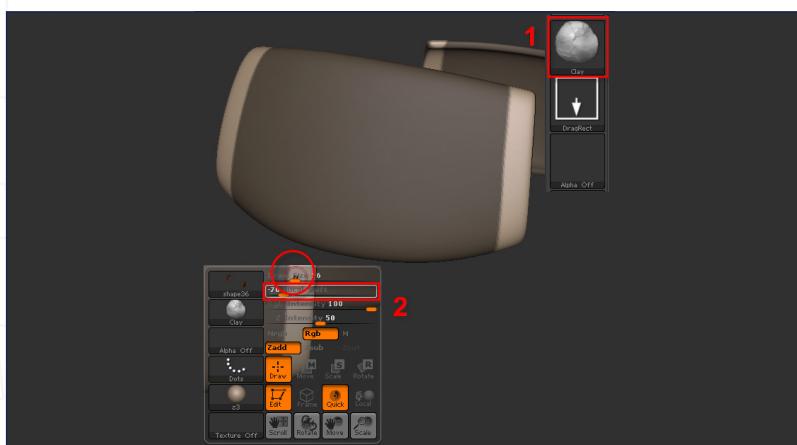


Fig 107

107. We are now going to create a mask so select the Clay brush and right click, changing its focal Shift value to make both circles closer. This will make the mask sharper (Fig.107).

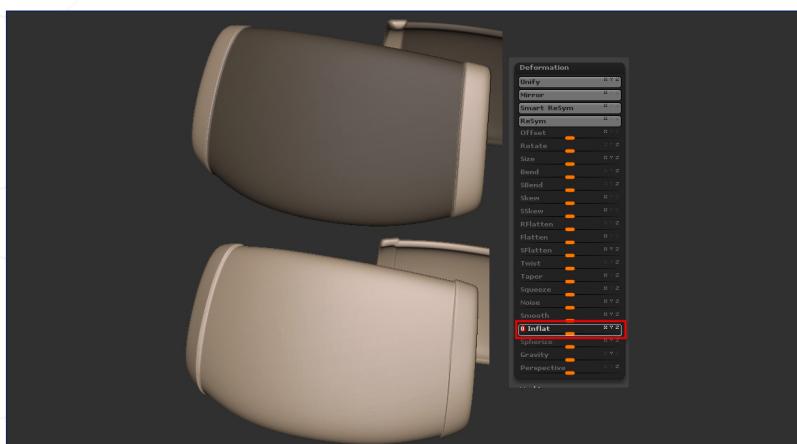


Fig 108

108. Now scroll down to the Deformation tab and change the Inflat Value. You could get exactly the same effect by using the Slash2 brush as above but I just wanted to introduce a different way of doing it (Fig.108).

109. This time you can use the slash2 brush to create more cloth pieces. You can also use the Standard brush with a low Z intensity to create the folds (Fig.109).

Fig 109



110. Once again use the customized brush to make the stitches (Fig.110).

Fig 110



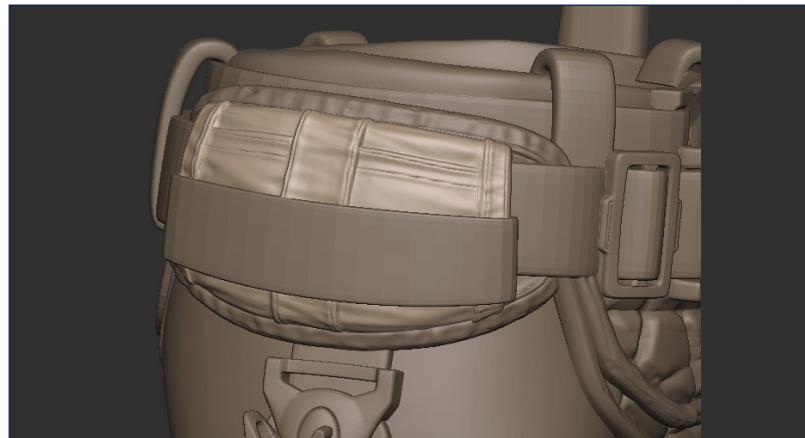
111. Use the Inflat brush for the smaller folds (Fig.111).

Fig 111



112. Here is a final preview (Fig.112).

Fig 112



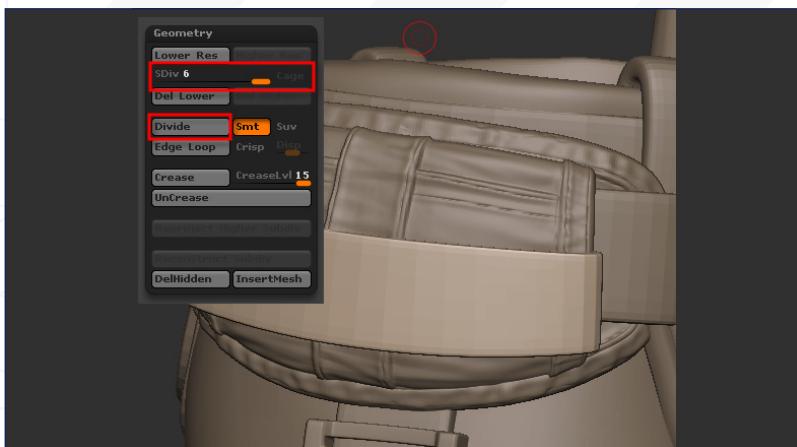


Fig 113a

113. Select another object and use the same procedure to complete it (Fig.113a - c).



Fig 113b



Fig 113c

114. Here is the same process applied to the belt using the same technique (Fig.114).

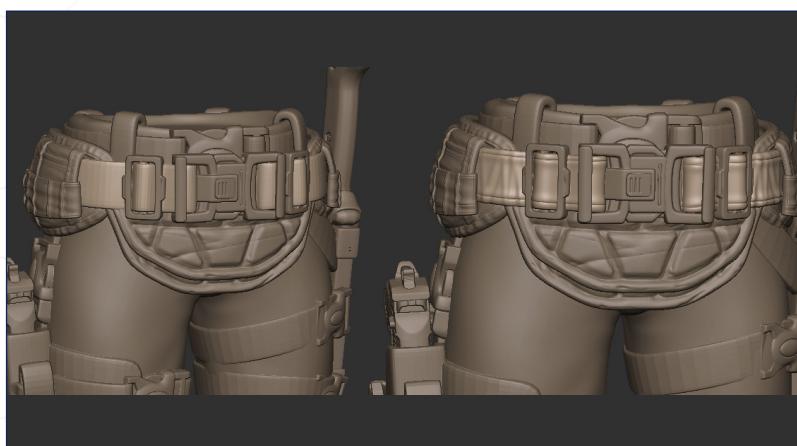


Fig 114

115. Here are the belt elements (Fig.115).

Fig 115



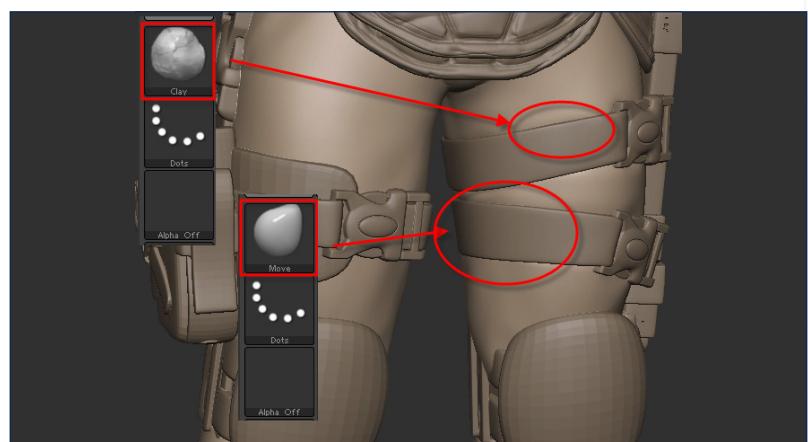
116. Here is the same for the second belt, for which we will use the same technique we used in the Chest chapter to create customized stitches using the alpha shown below (Fig.116).

Fig 116



117. We are now going to work on the straps but before we do this select the Clay brush and push in the pants to remove any artifacts (Fig.117).

Fig 117



118. Here is a final preview of the straps, still using the same technique to sculpt them (Fig.118).

Fig 118

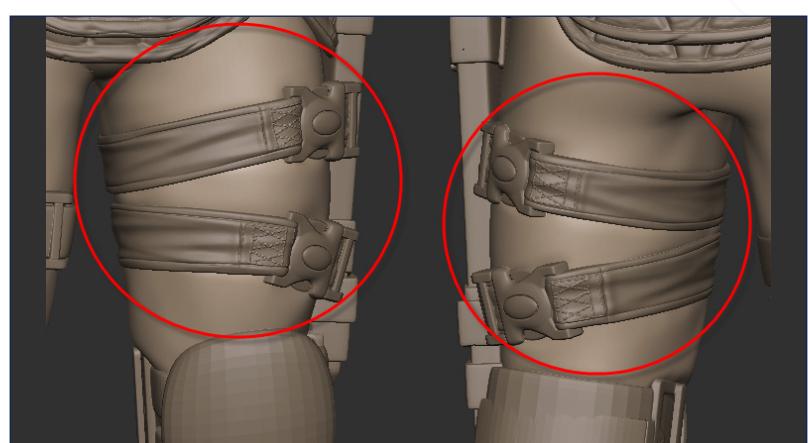




Fig 119

119. Let's work on the knee pads (Fig.119).



Fig 120

120. Modify the overall shape a little to get a better shape and with the customized brush draw a line around them to create the seam (Fig.120).



Fig 121

121. Here is a preview (Fig.121).

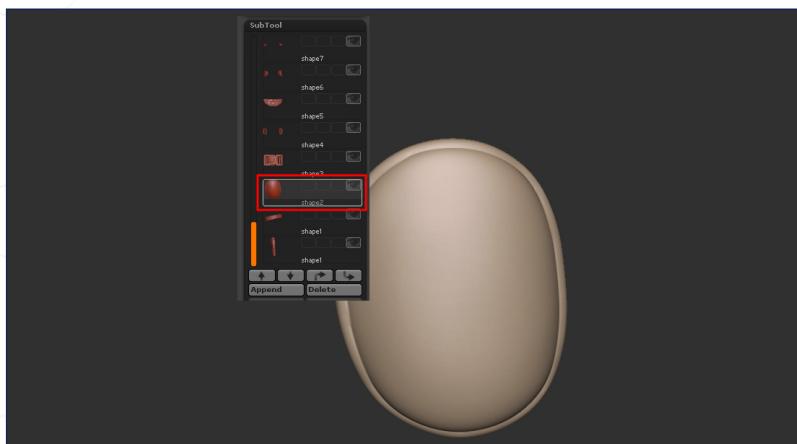
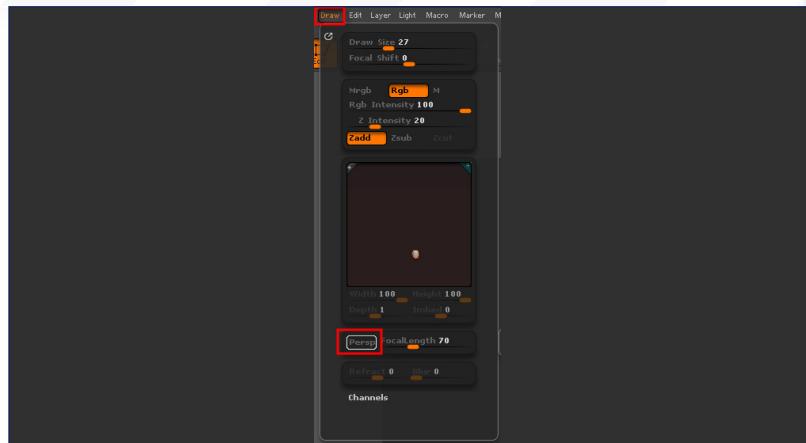


Fig 122

122. In order to work properly on the object, click on the eye on the right of the SubTool to hide all the surrounding objects (Fig.122).

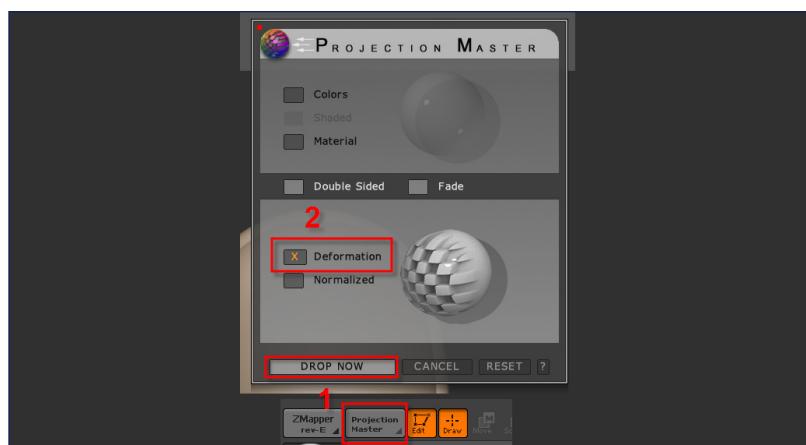
123. We are going to use the projection master to add a pattern across the knee pads. In order to get better results, you will need to turn the Perspective button off under the Draw tab (Fig.123).

Fig 123



124. Click on the Projection Master button along the top menu and uncheck everything except Deformation. Now press Drop now and you will be in the projection master mode (Fig.124).

Fig 124



125. You are now in projection master mode. On the right in the Tool Menu, select SimpleBrush. On the left select Line Stroke and below the Dam Standard alpha. Don't forget to change the Spacing value to 2, which will allow you to get some very clean lines. Finally press on Zsub button (Fig.125).

Fig 125



126. You can now draw some lines on the knee pad. (Fig.126)

Fig 126



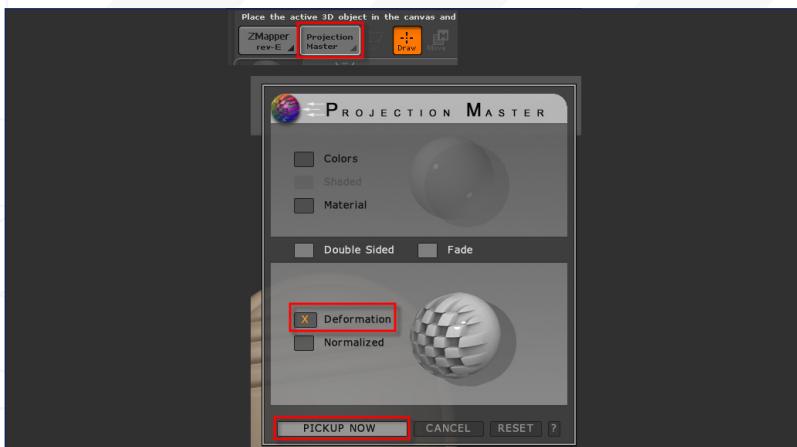


Fig 127

127. Once you are satisfied with your modifications, you can go back to the previous ZBrush sculpting mode by pressing the Projection Master button, keeping Deformation on and finally clicking on Pickup Now (Fig.127).



Fig 128

128. Here is the result (Fig.128).



Fig 129

129. Don't hesitate to repeat this procedure if you want to add more lines. You can then re-use the alphas you created in the Chest chapter to add more definition (Fig.129).

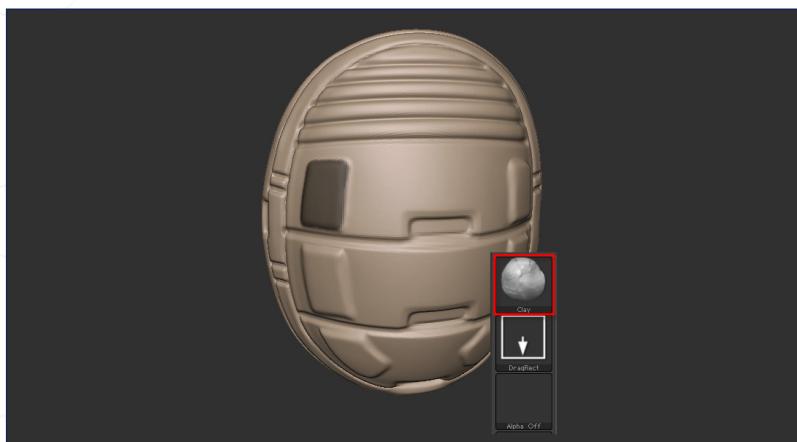
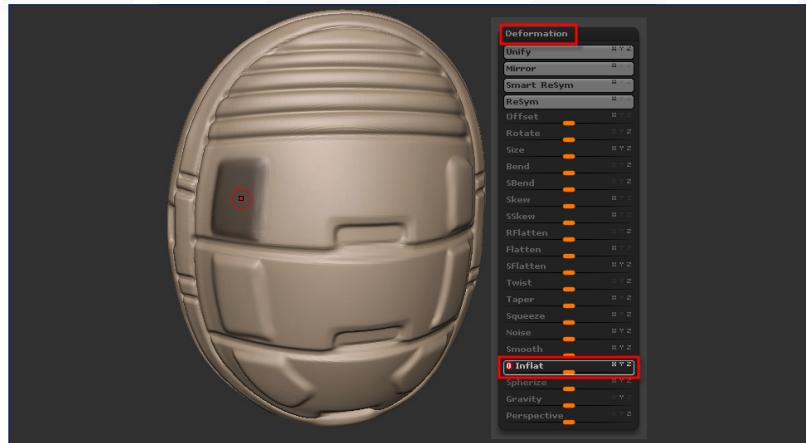


Fig 130

130. You can also use the mask technique to define more volume as explained above (Fig.130).

131. Ctrl click on that area if you want to smooth the selection and then change the Inflat value to extrude the masked selection (Fig.131).

Fig 131



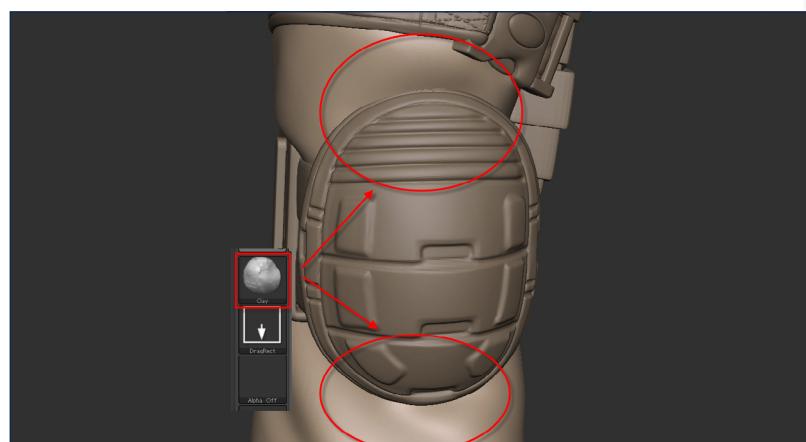
132. Here is a final preview (Fig.132).

Fig 132



133. You can now unhide the elements and use the Clay brush to push in the pants slightly (Fig.133).

Fig 134



134. And finally, you can use the Slash brush to add some scratches (Fig.134).

Fig 135

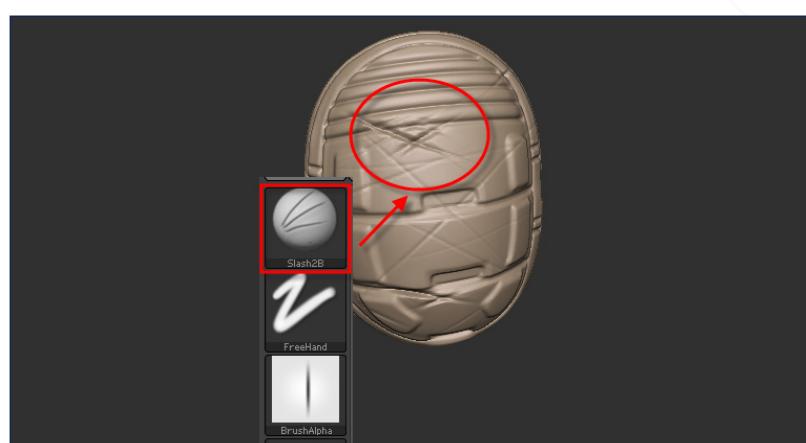




Fig 135

135. Now let's move onto the straps around the knee (Fig.135).



Fig 136

136. An another customized brush was used to add different details to the strap. A very simple alpha was created by using the technique explained in the previous chapter. With this brush selected, right click and change the Focal Shift value to make both circles closer. You now just have now to paint on the strap (Fig.136).



Fig 137

137. Here is a final preview (Fig.137).



Fig 138

138. Here is a final preview for the small straps shown below (Fig.138).

139. Here are some previews of the other objects using the same techniques (Fig.139a - b).

Fig 139a

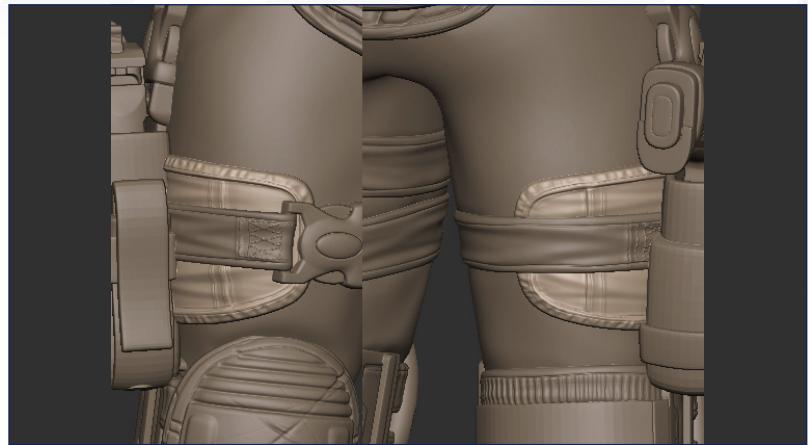


Fig 139b



Fig 140

140. A current preview (Fig.140).



141. We are now going to work on the pants. In order to sculpt them properly without any interference from the other objects you may wish to activate transparency (3).

To start sculpting folds, use the Standard brush with LazyMouse which I strongly recommend if you want smooth and clean folds. It's also good to paint these slowly as you will get better results (Fig.141).

Fig 141





Fig 142a

142. Here are the pants step by step (Fig.142a – 2).



Fig 142b



Fig 143

143. Now let's move onto the seams using the Slash2 brush as explained above (Fig.143).



Fig 144

144. Don't hesitate to hide everything except the left or the right piece of the pants in order to sculpt the seams inside the legs (Fig.144).

145. Draw more lines with the customized stitches brush (Fig.145).

Fig 145



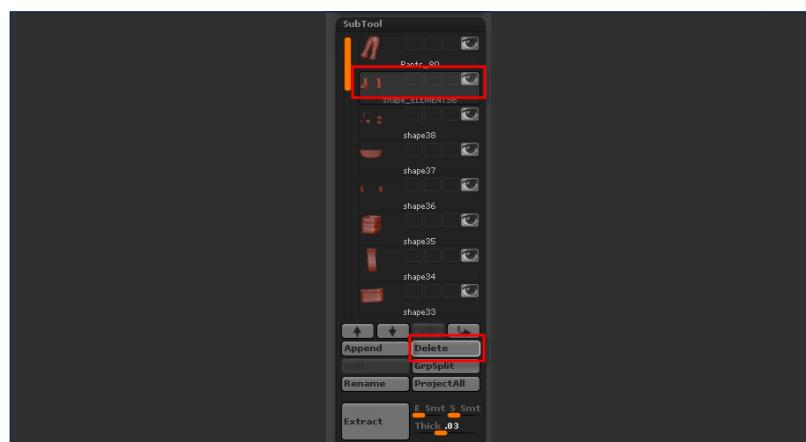
146. And once again using the Inflat brush, sculpt the small folds on each side of the seams to finish the details (Fig.146).

Fig 146



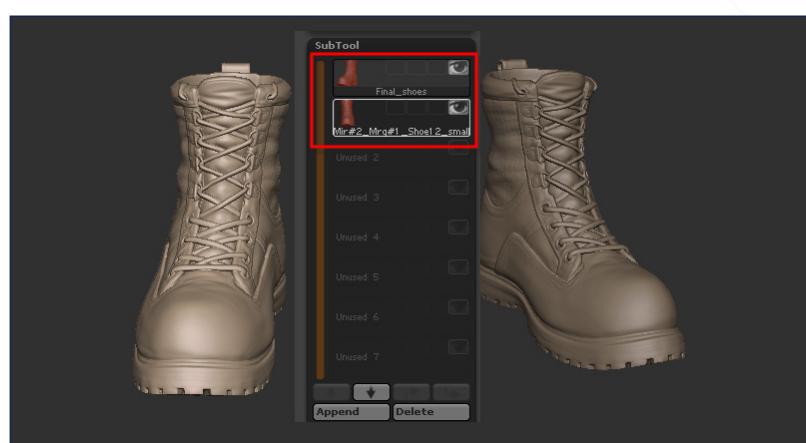
147. Lets' now replace the shoes with the real ones so first of all delete the existing one (Fig.147).

Fig 147



148. Open up your Zbrush file with your final shoes inside (Fig.148).

Fig 148



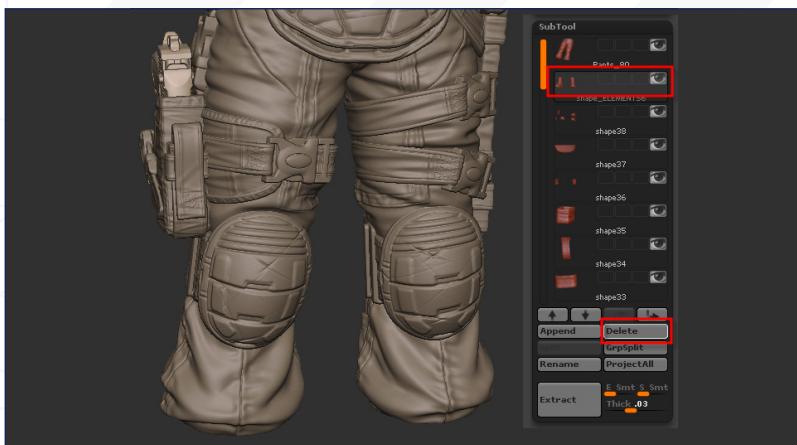


Fig 149

149. Go back to your pants Tool and be sure to delete the old shoes (Fig.149).

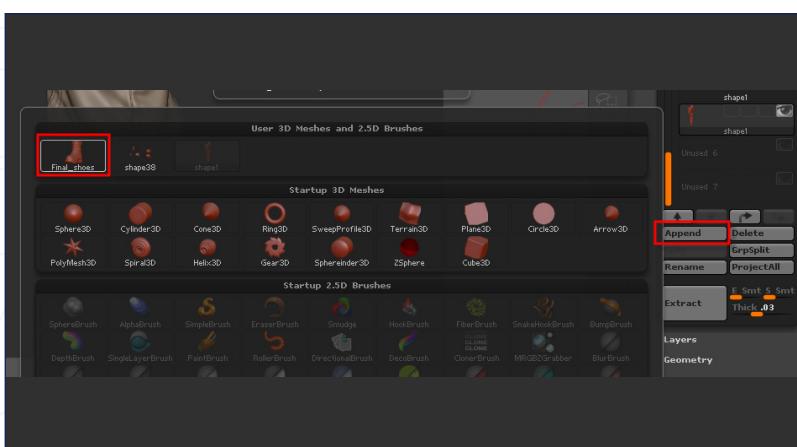


Fig 150

150. Append the real ones (Fig.150).



Fig 151

151. Here is a final preview, with the completed pants (Fig.151).

CEDRIC SEAUT

For more from this artist visit
<http://www.khalys.net/>
 or contact
 cedric.seaut@voila.fr





Luxology®

 modo

modo is for artists



digital-tutors[®]

Online Training Library

OVER 10,000 LESSONS

for only **\$45**
per month



Start Learning Today
Visit www.digitaltutors.com

This image is from the Rendering for Product Visualization in Cinema 4D course

No more waiting! All members now get instant access to new releases.



DOWNLOAD
RESOURCES 

- FREE MOVIES

MUDBOX

FEMALE CHARACTER CREATION

Welcome to Mudbox female character creation with Wayne Robson. This series will be providing a comprehensive guide to sculpting female characters using Mudbox. Wayne Robson will talk us through identifying the characteristics that define what is unique in each of our female characters, and will then give advice about sculpting these using many of the features that are available when using Mudbox.

CHAPTER 1 | THIS ISSUE
Gaunt / Old

CHAPTER 2 | NEXT ISSUE
Obese

CHAPTER 3 | JULY ISSUE 059
Extreme Piercings & Tattoos

CHAPTER 4 | AUGUST ISSUE 060
Zombie

CHAPTER 5 | SEPTEMBER ISSUE 061
Vampire

CHAPTER 6 | OCTOBER ISSUE 062
Werewolf

CHAPTER 1 - OLD

Software Version Information

INTRODUCTION

What makes an old woman look firstly like a woman, and secondly 'old'. For this 1st article in this 6 part series we have a particularly knotty problem. Not only are we sculpting 'age' but also it has to be age specific to a female. Research is the key to a project like this, and thankfully we have two very powerful tools at our disposal, our eyes and Google. The 1st thing I did for this project was to search on Google and other search sites for as many useful images of old women as I could and round these up into a specific reference folder. We won't be replicating any of these, but rather using them as a guide to keep us on track through the project. For this 1st one we'll be using the default Mudbox base head that ships with the program and can be found under the 'Mesh' section of the create menu.

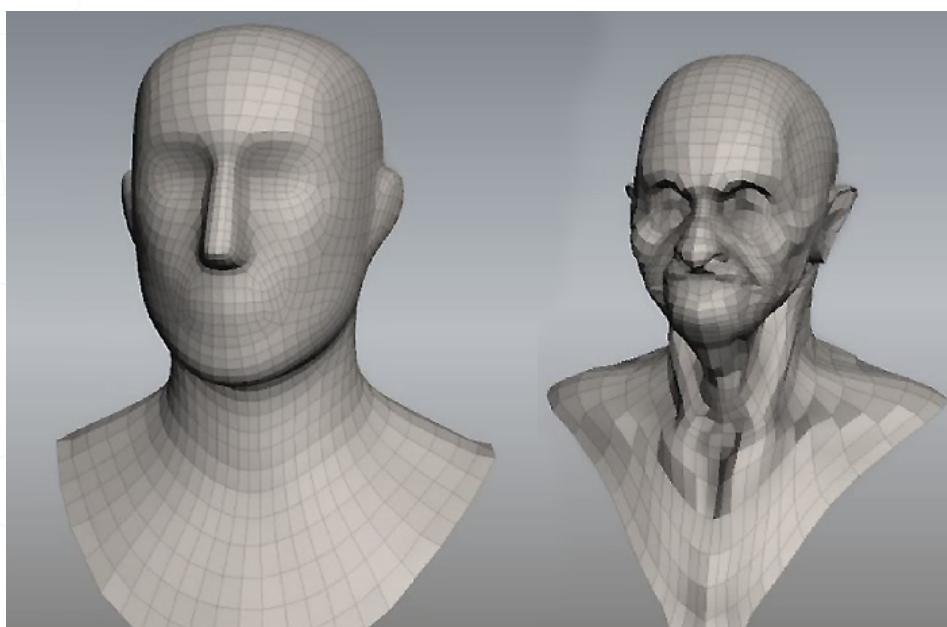
a woman and a man for a bust such as this. Women more often than not (and there are exceptions to this), have a smaller head in relation to their body size and a longer neck. Their skull has a less obvious brow area and is far rounder in appearance. The chin of a woman is less square and often a little more pointed, basically the jaw line is softer. Their eyes in youth often appear bigger than their male counterparts, but...many times this can be an optical illusion caused by a combination of a smaller skull and careful use of eye makeup. (In old age once gravity starts to take over and skin 'hangs' more, the eyes can appear smaller.) A woman's shoulders are not as pronounced as a man and are far flatter. Although in old age with degradation of the spine this can cause problems such as a slightly 'hunched back' appearance and as such change this shape considerably. The clavicle itself is also not only thinner but also takes on a slightly different shape in relation to a man.

WHAT MAKES MEN AND WOMAN DIFFERENT?

By passing the obvious things and the even more obvious jokes, let's get down to what exactly we can perceive as differences between

SCULPTING

When teaching sculpting and Mudbox at various places and companies around the world I try to encourage 1 thing, NEVER use a brush just because I or anyone else uses it. You should



Original Mudbox Default Head

Modified forms Default Head

Fig.02

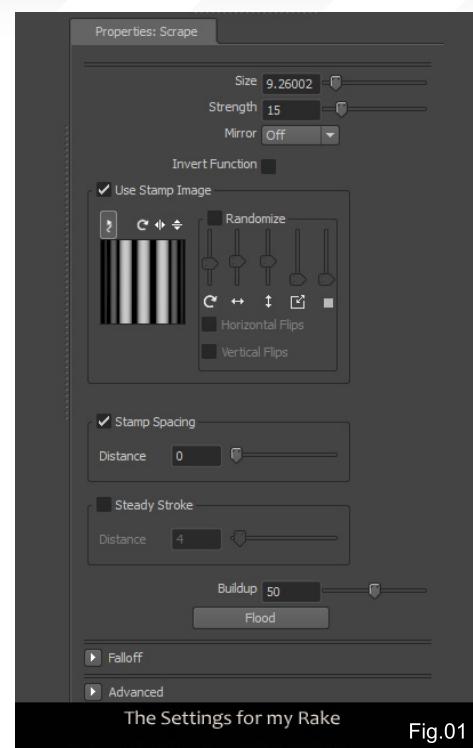


Fig.01

be concentrating on the effect you need from a brush and not rely on a brush itself. I like to think of them as a small handful of categories.

- Sharp cutting brushes
- form and mass adding brushes
- 'rake' brushes to average forms See image for my settings for the fantastic rake I use) (Fig.01)

Remember that a brush can take on many properties when you change its fall off curve, its strength, any stamp used, brush spacing and even the minimum setting for pressure sensitivity amongst many others. The better you know your brush properties the better you will be able to set a brush to do EXACTLY what you want it to. Think like a traditional sculptor would, are you adding mass, removing mass or averaging forms? This means you are never reliant on a brush to do what you want to, but rather your own hands and brain. Programs change and so do tools within them over time, so being able to think in a more traditional way makes your hard earned knowledge far more 'portable' if changes to a program occur.

(Fig.02)

The Mudbox default head base mesh needs some changes straight out of the box before we use it. The very first thing you need to do is correct proportions and make its very basic forms fit what we are about to sculpt. If you get this part wrong and rush straight to the 'cool bit' you're going to hit a very painful wall. Make sure you use your reference images you found on Google to keep you on track.

Use your grab brush to thin out the neck and feel free if you're using Mudbox 2011 to scale the head down using the pose tool. (To do this go to the posing tab, draw a bone from just below the skull in a side view, then hold your middle mouse button down once you hover over the bone origin and slowly shrink the head area.) I've included a video that blends between the default human head base mesh and the corrected version for your use to help you with this.

CHEATING IS GOOD

One thing that drives me crazy more than any other single thing in the whole of 3d is an overly macho attitude to sculpting. Doing things the hard way is fine for personal projects, but when you have a boss breathing down your neck needing the model in an hour, doing it the hard way is not an option. So rather than eyeball the wrinkles for the face I use a small cheat of mine that I use regularly in production and pull one of the low res images I use as reference and photo project this onto a texture on the as yet unsculpted head using the projection brush. Why?

It saves time trying to replicate a wrinkle pattern without giving you so much of a hand hold that it's too easy. It gives you a basic guide without doing all the work for you. It also means you can concentrate on your sculpt without having to jump back and forth looking at reference images. No one will declare you the next Da Vinci, no one will give you extra credit for doing it this way, but it may just mean you still have a job when others do not. In production time is



Fig.03

money and the faster you can get a good quality asset out the door the happier your boss or art director will be.

Fade this texture back a bit to about 50% opacity, and don't be afraid to change things if you feel that 'reality' isn't working well. I often find in life that reality has to be 'corrected' to be aesthetically pleasing. People do not follow the rule in anatomy books, and it seems neither does the creator, as there are people out there who run contrary to every rule of anatomy. You will often see people with wrinkles that run in the wrong direction, eyes that are far further up or down the head than the halfway mark and much more. So bear this in mind when you sculpt. Ask yourself whether the sculpt is going to reflect reality or a modified reality to be more pleasing to the eye, or be more stylistic. That's

a question only you can answer as every artist is different and can have often vastly differing views on the subject. My personal rule is 'the final look is king'.

PROCESS OF THE FORMS

(Fig.03) When sculpting although you can (and I often do) work without doing this, when you are starting out it is a very good idea to follow this simple process. Once you have it ingrained within, you can then 'forget what you have learned and just sculpt'. By that time it is so hard coded into you that you can nail your forms pretty close to the mark without having to follow this process. In the same way that if you play guitar you must learn scales, modes etc, there comes a time when you must forget the theory and just play. Music and art have a lot in common.



Fig.04



Fig.05

Always start by visualising in your head the bone structure of the body part you are trying to sculpt. So in our case that is the skull, clavicle and neck vertebrae. Take time making sure that these forms are spot on the money before you go any further. If you get it right, then your life becomes easier as you sculpt, if you get it wrong, life gets a whole world of hurt harder as you will have a lot more corrections to make.

(Fig.04)

Once you have the basic skull and neck etc you then have to visualise the largest muscles and muscle groups. Now I won't lie, anatomy knowledge comes in very handy at this point. Yes it is boring to learn and it is not much fun, but learning it pays dividends for your sculpting. Once these have been nailed, you then move onto smaller muscles and finally the fat and skin.

(Fig.05)

THINKING OF WRINKLES

(Fig.06) A wrinkle is not just a carved in line on your sculpt. Take a good hard look at some macro shots of wrinkles, or failing that find some old people and have a good hard look at them. (They may find this a bit scary, so try to use family members if you can...who will try to have your certified insane, or laugh a LOT.) A convincing wrinkle or set of wrinkles is far harder and more complex than people often imagine. A wrinkle is 99% of the time not a single unbroken line, but many lines. A wrinkle often splits into smaller wrinkles that fan out at its ends. So how can we sum up what makes a wrinkle look like a wrinkle?

- A wrinkle has mass, it has weight and obeys the laws of gravity. It isn't a bulge with a carved line floating in the air.

- Wrinkles form where the skin moves and compresses and stretches regularly. So this is why an old fisherman who has worked outdoors his entire life has a different 'wrinkle pattern' to someone who has worked inside their adult life.
- They can more often than not have a very 'jagged line' appearance
- A wrinkle likes to be with its friends...you rarely see one without some others like it close to it.
- Skin sags and loses its elasticity in old age, so bear this in mind when sculpting wrinkles as part of 'old age'.
- Wrinkles are not all the same depth, like anything else they come in a vast variety.

Ensure you have lots of different wrinkle depths, not just one.

- Age, environment, race and whether a person has done a job indoors or outdoors all play a bit part in a wrinkle pattern on a person.

- As mentioned a wrinkle is not just a carved in line, even a single wrinkle line is often smoother on one side of the line than the other due to gravity.

So even with a very low res image from Google as our guide for the wrinkle pattern there is still a lot to do. Keep in mind the above list as you sculpt these wrinkles in and again feel free to modify reality to keep the end result looking good. Use your subdivision levels to their greatest extent. If you spot a wrinkle that is



Fig.06



Fig.07

going to require you to subdivide to silly levels, get rid of it and work out an alternative. You can of course export your sculpt and retopologise it (I use Topogun for this) and then re-bake this to your high resolution sculpt using a displacement map. For this model, as it was for a still image this wasn't required.

TEXTURES

THE DIFFUSE

We already have a great head start on our diffuse map from our low res projected image that gives us a great guide to the colours we need to paint. You will most probably need to over paint this somewhat to keep your texture resolution high enough. So try to use it as a guide only and smooth it out using the smooth brush a small amount to get rid of any jaggies. Start by sampling what you see as its base

color, see through the rest of the skin shading and lighting effects the image may have on the photo to its basic colour. One tip I find useful is to paint a small swatch of each sample image to a different layer that I keep on top of all others so I can sample this any time I want. It also has the added bonus of allowing you to see your basic color family and amend it if you wish to. (Fig.07)

After painting your base colour, stipple in some of the other colours in the skin from the reference image and treat cavities as slightly redder and darker in level than the base colour. Use a soft opacity for large deeper areas such as near the clavicle and feel free to use as many texture layers as you like. As you will see in the video that accompanies this article, I paint by hand about 70% of the head to match with the

photo projection and then correct as need be. If you always keep the photo texture on its own layer you can then even any colour or shading discrepancies out in Photoshop.

THE BUMP MAP

These days bump maps are the red haired step child of then 3d texture family. As more often than not people favour a bump map. I love bump maps as they can not only allow you to make your model look like it has FAR more polygons than it actually does, but you can also roll it into a normal map using the Nvidia normal map plug-in for Photoshop. Whether you hand paint one, or whether you use a modified version of your diffuse texture is entirely up to you. I would recommend keeping the white outwards detail on one layer and the deep black inwards detail on another layer so that you can

then blend these as need be. Remember that mid gray is zero effect. I usually use a modified diffuse map copy and then paint over this on a layer above as needed. If I'm feeling especially cocky, I'll also add a mid grey texture below the diffuse map copy in my bump channel in Mudbox to allow me to also fade that in and out as I need. Remember you now have a lot more painting brushes Mudbox 2011 such as dodge, burn, contrast and invert (and many more) that will give you a large helping hand when painting any texture.

THE SPECULAR MAP

For this sculpt I cheated for the specular map and used a modified diffuse map with far lower levels. I then desaturated this in Photoshop and then went to hue /saturation and turned on colorize and made it a slightly desaturated blue (heading a small amount towards purple.) You may also find that inverting a diffuse color map will get you very close to this colour in many cases. Meaning you can then simply dip the levels as you need. This then has an ambient occlusion map generated in Mudbox for the highest level of our mesh on top of it set to 'multiply mode'. You can either use the blend modes within Mudbox, or do it in Photoshop, whichever you feel best about. Another good tip is to tint the dark areas slightly red as this can really help to sell your texture as real.

(Fig.08 – 09)

CAPTAINS LOG: ADDITIONAL

OK let's get this straight out of the way right now...I hate doing hair in 3d apps, you name it I've tried it and I find it far too slow, boring and often overly uncontrollable in many ways. I prefer to either sculpt the hair or to paint this over by hand in Photoshop in post where I can for a still. Painting hair is exactly the same process as sculpting it, look at as much hair reference for the type of hair you are about to paint as possible, and work from broad strokes denoting the very large forms and flow of hair to the very small fine individual ones. Remember



Fig.08

your light source and where any highlights and shadows may fall. Try to give your hair as much depth as you can, that along with its light and shade helps to sell it as real if you have a good set of forms for your hair. One tip I would say, would be to do a number of hair form tests if you're painting it to see what works and what doesn't before you spend any length of time painting the hair in.

As for the clothing, that was added in Photoshop with a quick paint into help frame the head a bit more, because when you're doing an 'old wrinkly person number 1,486' of your sculpting life its best to try and make it a bit more exciting. The theory of painting the fabric in was exactly the same process as painting the hair in. Large forms 1st and smaller forms later and polish up as you go.

On the subject of post work on an image, now I have a rule, if it can be done on a live shot in composite then its fair game. If its fine for a Hollywood film to have some post work, then it's sure as god made little green apples ok for us to do it. But I suppose to be fair as I've hand-painted the hair it then makes any post work fair game for this particular shot, although mine has been restricted to basic color correction only in this case. I'll show you a 'with and without the hair and fabric' paint over for those who feel its cheating.

WAYNE ROBSON

For more from this artist visit
<http://www.dashdotslash.net/>
 or contact
wayne@dashdotslash.net



SOLUTIONS FOR BROADCAST & ADVERTISING

Trees, forests, mountains, oceans, skies, planets... Vue 8 adds entire natural 3D Environments to your scenes.



TV advertisement campaign
for Bermuda Tourism
created with Vue by
taylorjames.com



Vue for
3D Enthusiasts

Vue for
3D Artists

Vue for
CG Professionals

Fully integrated in 3ds Max, Cinema 4D, Maya, Lightwave and Softimage:

- xStream (complete natural 3D environments)
- Ozone (hyper realistic 3D atmospheres)



Vue 8
Release 8.5

Free Vue 8 Personal Learning Edition
Visit ple.e-onsoftware.com

Learn Animation from the Best in the Business



thinkTank
TRAINING CENTRE
www.tttc.ca

CHAPTER 1 | APRIL ISSUE 056

Planning your Rig

CHAPTER 2 | THIS ISSUE

Knowing your Tools

CHAPTER 3 | NEXT ISSUE

Rig Creation – Part 1

CHAPTER 4 | JULY ISSUE 059

Rig Creation – Part 2

CHAPTER 5 | AUGUST ISSUE 060

Facial Rigging

CHAPTER 6 | SEPTEMBER ISSUE 061

Scripting



INTRODUCTION TO RIGGING

The aim of these tutorials is to show and explain how you might tackle rigging your 3D character for animation. These tutorials will give help and advice to novices and experts who are looking to build on their rigging skills or approach rigging for the first time.

The series gives a detailed step by step guide as to how to approach rigging but also shows us how to tackle common problems and issues that regularly occur even in a professional environment. The artists will be reflecting on working in the industry as well as talking us through their individual approaches to creating the best rigs possible.



THIS DOWNLOAD INCLUDES

- FREE MODEL
- FREE SCENE FILES

INTRODUCTION TO RIGGING: 2 - KNOWING YOUR TOOLS

Software Used: 3ds Max

CHAPTER OVERVIEW

Welcome to the second chapter of the Introduction to rigging tutorial series for Max.

In the previous chapter we spoke about the concept of rigging and how to approach a rig, before speaking about the software itself.

In this chapter we are going to look at the tools that Max has for rigging. We are not aiming for a total explanation of each one - Max has a proper documentation that explains each tool in detail.

Here we will explain the right use and the advantages of each tool, together with some tips that will help you when you build your rigs.

Note: this tutorial has been done with Autodesk 3ds Max 2010, but can be followed with previous versions of Max (until 3ds Max 7, previous versions would lack the necessary tools).

In case we use specific tools only available in Max2010, we will mention it and we will explain how to make something similar with previous Max versions if needed.

Note: during this chapter you will find the word Maxscene: followed by the name of the max file. This max scene files are been provided with this tutorial, the files are created to illustrate the lessons. Remember to move the time slider as a lot of them are done with animation to illustrate better the examples.

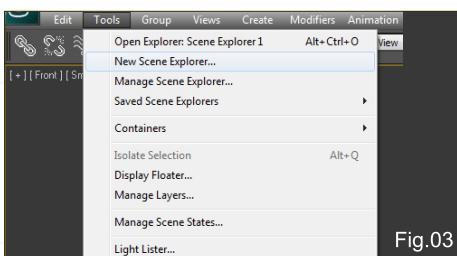


Fig.03

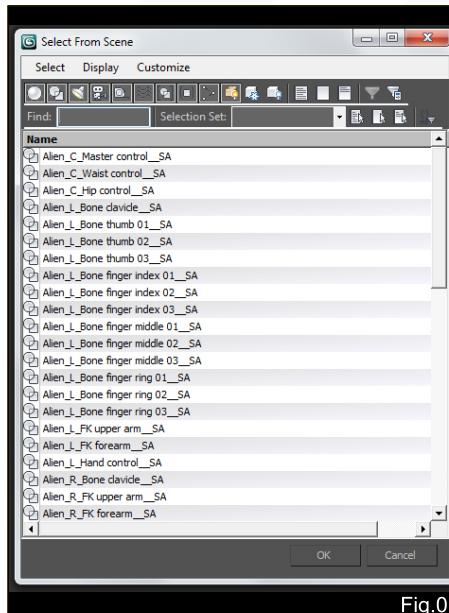


Fig.01

The files had been created in Autodesk 3ds Max 2010, so it can only be opened with this version of max or newer ones.

SCENE EXPLORER, SELECTION FLOATER

Selecting objects -or a list of objects- by name is a thing we will do in Max all the time, specially when we are doing rigging, constraints, skinning and using modifiers. For these actions we need to select specific objects and if we do it by name is much easier. Max has a new tool since Max2008 that is a more advanced selection tool with lots of options - the *Scene Explorer*. You can use it by pressing the key H in the keyboard. (Fig.01)

This tool is great but sometimes slow, and it has too many options. You may prefer to use the old tool *Selection Floater*. To do this you need to setup 3dsMax to work with the old tool when we press H in the keyboard instead of the Scene Explorer.

Selection floater is quicker and at the end saves a lot of time, because we will be opening and closing the tool often. (Fig.02)

Note: Edit the *CurrentDefaults.ini* (ini file with notepad or other software)

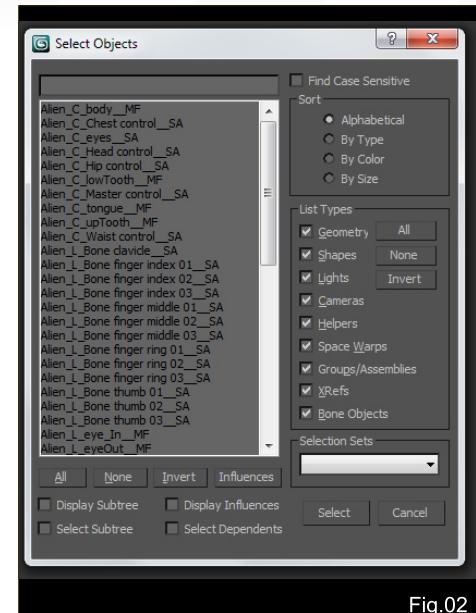


Fig.02

The location is in your 3sMax directory inside programs by default:

C:\Program Files\Autodesk\3ds Max 2010\Defaults\MAX\CurrentDefaults.ini

This is a longer path in case you have got Max setup to have your project in My Documents instead of the 3dsMax folder:

C:\Users\luis\AppData\Local\Autodesk\3dsmax\2010 - 64bit\enu\defaults\MAX\CurrentDefaults.ini (please replace luis with your user)

These two paths are based in Windows 7, if you use another version of windows you can do a windows search of *CurrentDefaults.ini* to find the location.

At the end of the file will be this line:

[Scene Explorer]
SelectByNameUsesSceneExplorer=1

Change it to:

[Scene Explorer]
SelectByNameUsesSceneExplorer=0

Note: once changed you still can access the tool Scene Explorer in the tool menu.

Tools/NewSceneExplorer (Fig.03)

TRACK VIEW, COMMAND PANEL

There are two main tools that we are going to be using constantly – *Track View and Command Panel*.

The Track View is used to edit the curves for animation but this is not its only utility. It can also be used to add controllers, edit wiring and setup keyables and locks. (Fig.04)

Note: To open the Track View in the menu go to - Graph Editors / Track View / Curve Editor

The Command Panel is on the right side of the screen and is used for lots of options. It is divided into different labels and the ones that we are going to use more often are the following:

Create: to create an object; the most common for rigging will be points and bones.

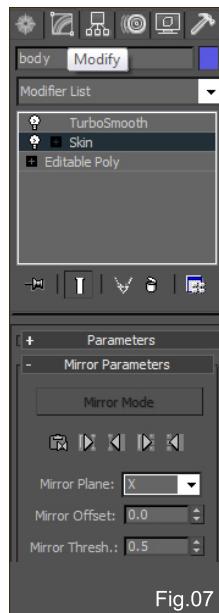


Fig.07

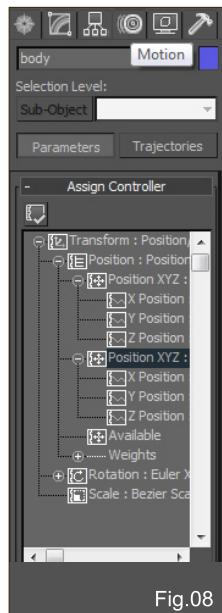


Fig.08

Modify: to add modifiers to objects, such as skin, skinmorph, bend, etc (necessary for deformation of the objects)

Hierarchy: to change the pivot points of the objects and to setup the locks and inherits of the objects.

Motion: to manage the controllers for each object and to setup the axis order of rotation. (Fig.05 – 08)

There is a relation between Track View, and Command Panel / Motion; both can be used to see the value of each controller, to add new controllers or remove them.

Don't worry about knowing how to use them for now, we will be using them in the next chapters, right now we only want to be familiar with the names.

WORLD, GIMBAL, LOCAL

When we manipulate an object, we can move, rotate or scale it. And we can do it in different coordinate spaces.

To change the coordinate system we can do it in the main toolbar. (Fig.09)

The most used coordinate spaces for animation are *World, Local and Gimbal*. The other coordinates are more useful for modelling and we are not going to focus on them.

It is important to know the difference between the three systems:

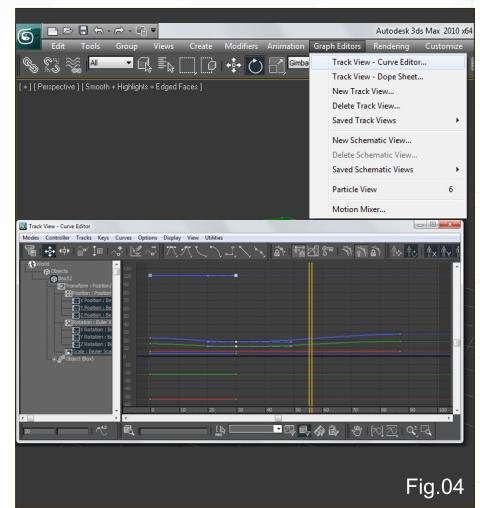


Fig.04

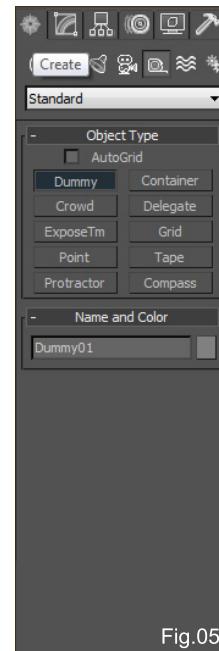


Fig.05

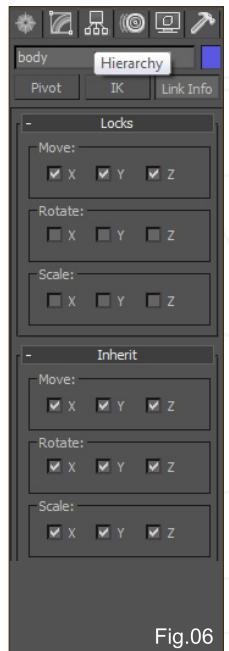


Fig.06

World: moves, rotates or scales the objects in the axis of the world; this is good to position the objects in the scene; when you want to move, rotate or scale objects without worrying about their orientation.

Local: uses the coordinate system of the selected object, the orientation of the pivot of that object in particular.

Gimbal: is the way that Max manages the objects internally in 3D space and is related to the curves in the Track View, always related with the parent of each object; we will learn about it in the next section. (Fig.10 – See Maxscene: 4_Coordinates.max)

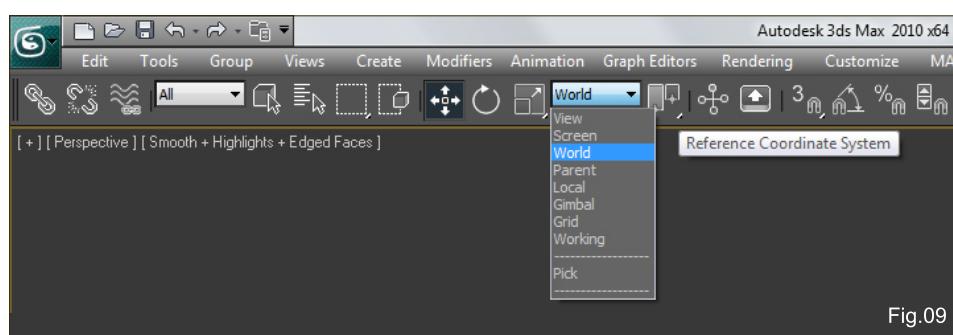


Fig.09

Try to rotate and scale changing the coordinate systems. You will see the difference between each of them.

RELATIONSHIP OF AN OBJECT AND ITS PARENT; GIMBAL VALUES

Now is time to start using the Track View to see how Max manages the value of each axis of position, rotation and scale.

To open the Track View in the menu go to -
Graph Editors / Track View / Curve Editor
(Fig.11)

There is a rule that will help you to understand the internal values of Max in the Track View - the Gimbal axis of an object are the local axis

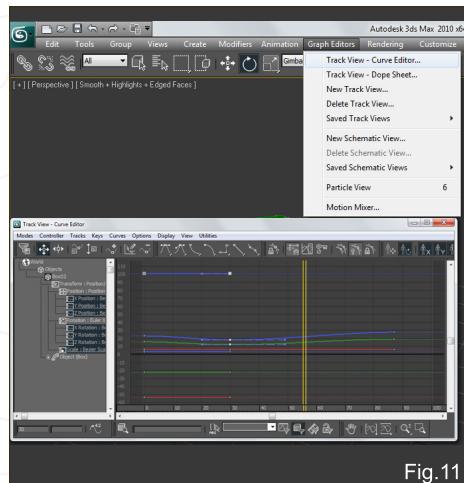


Fig.11

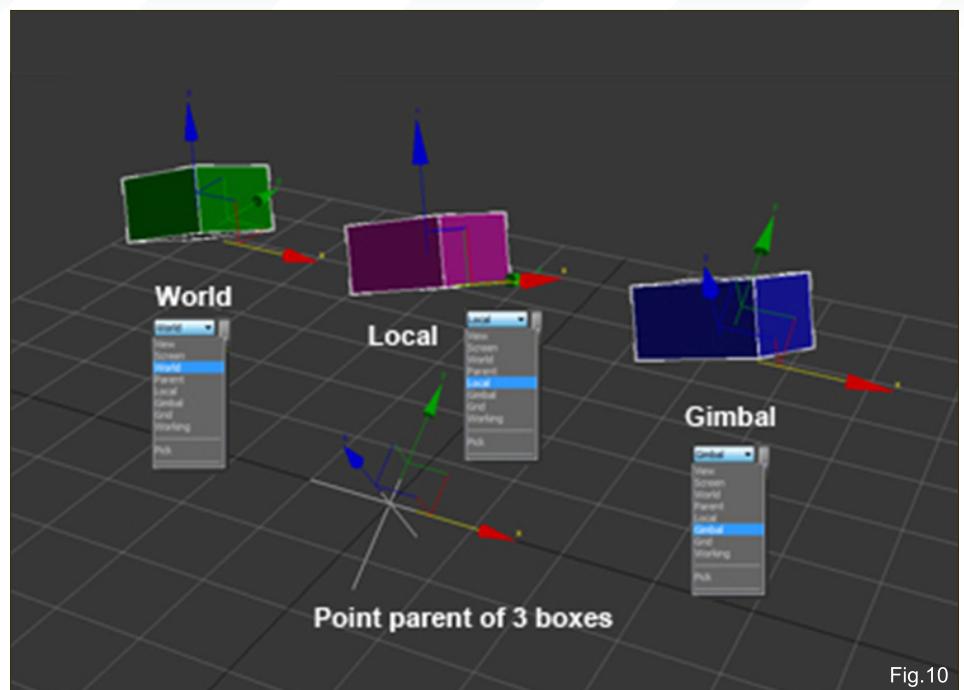


Fig.10

of the parent. In case an object does not have a parent, the parent of that object will be the world, so the gimbals axes are the axes of the world. (Fig.12)

To understand gimbal, local and world, just have the Track View open and the animation in autokey and move an object only along the X axis in the three coordinate systems. This way you will see how the curve does for each axis when you move the object in world, local and gimbal coordinates. Please make sure you are

not in frame 0 so it will create a key in frame 0 and another key in the frame. You will see how the curves react.

Note: make sure that the object has a parent similar to the picture below; if the parent is a bit rotated it will help to distinguish between gimbal and local. (Fig.13)

Similar behaviour will happen with rotation and scale.

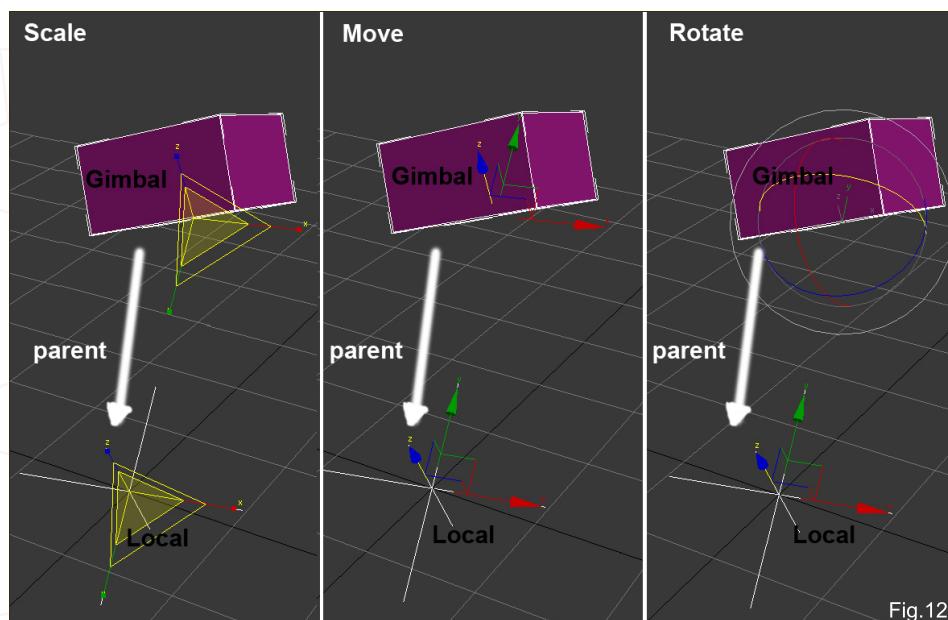


Fig.12

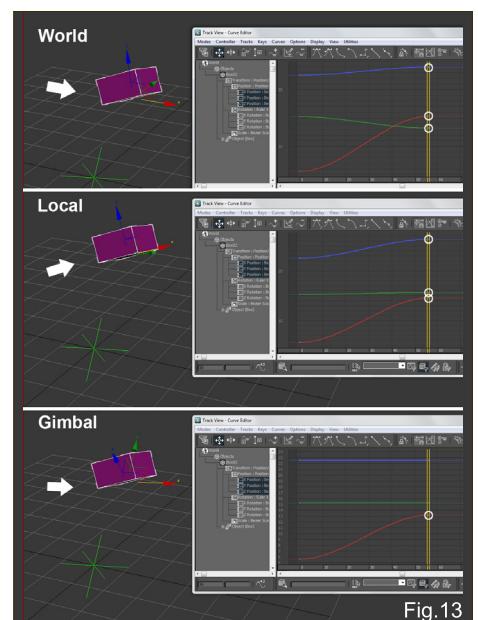


Fig.13

GIMBAL, LOCK AND AXIS ORDER

Gimbal Lock is a problem that we have when we rotate an object in its three axis. The simple explanation is that one of the axes will always be parallel to the parent axis. So after rotating all the axes, two of them will come very close. There is no way to avoid this problem, in that case the animator will choose to use local coordinate system to rotate the object in the desired direction, but with the consequent result of moving the three curves at the same time. (Fig.14)

Note: on the image 2 (gimbal), we can see that the blue Z axis is parallel to the blue axis of the local parent. And the red X axis is almost on top of Z. The solution is using local as shown on the image number 1.

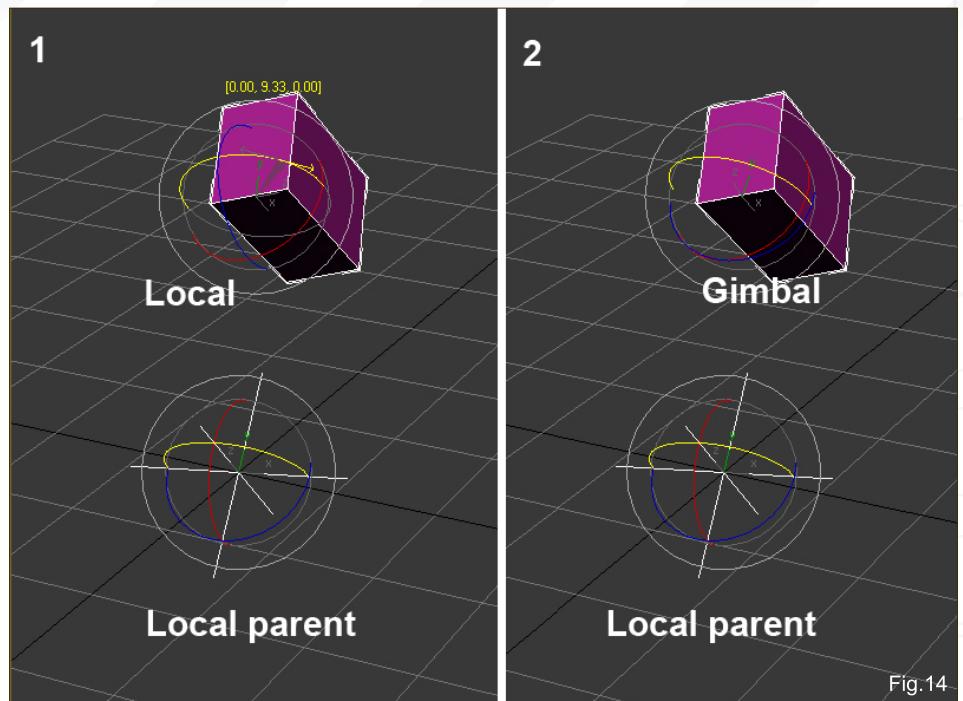


Fig.14

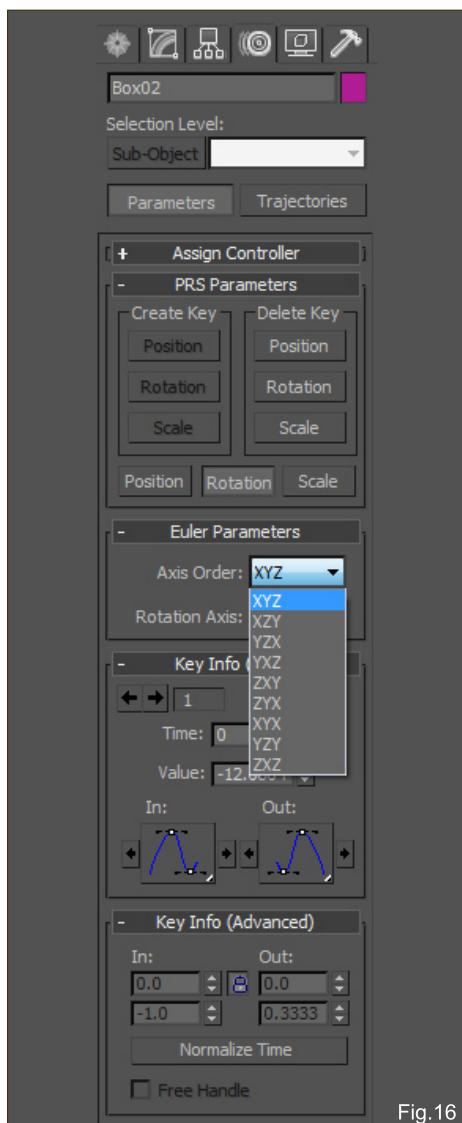


Fig.16

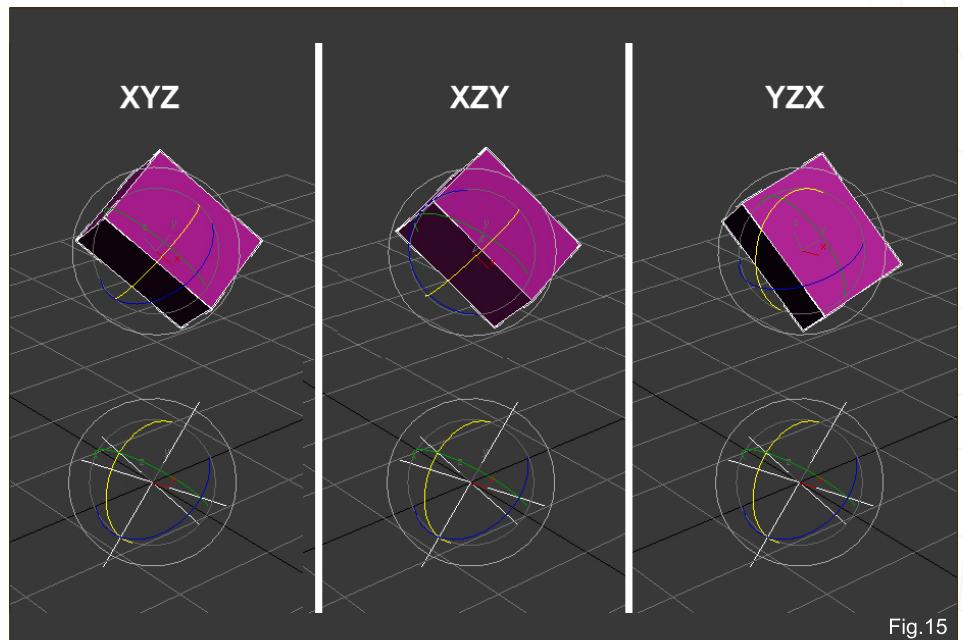


Fig.15

There is a way to decide what axis is always parallel to the parent, so our gimbal and local will react the same way. It is called *Axis Order*. We will see what the best axis order for each control is.

AXIS ORDER

To change the order of the axis, we use the Motion Label on the Command Panel. In the rotation PRS parameter, the last letter will be the axis parallel to the parent. It is Z by default. 4_Axis_order_change.jpg (Fig.15 – 16)

Note: You can see on the images above that the last letter of each axis is the axis that is equal to the parent.

The order of the other two letters is important too.

In XYZ, Z will be parallel to the parent. When we rotate Z, X and Y will follow. When we rotate Y, X will follow but Z will not. And when we rotate X, neither Y nor Z will follow. The letters on the left will follow the rotation, but not the ones

placed on the right of the axis in particular. It sounds a bit complex, but with practice and the samples in the next chapters you will master the concept.

CONTROLLERS

Max uses controllers to manage the movement, rotation and scale of the objects. There are many of them but we are going to concentrate in the ones most used in rigging.

To change or apply a controller you can do it in the **Command Panel Motion**, in the **Animation Menu** and in the **Track View**.

We do recommend using the **Command Panel Motion** or the **Track View**, as using the **Animation Menu** normally add too many unnecessary controllers and float lists.

You can assign a controller with the **Command Panel Motion**, select position, rotation or scale. By using the button **Assign Controller**, it will give you a list of available controllers. (Fig.17)

If you want to use the **Track View**, right click on the desired controller and on the emerging quad choose **Assign Controller**. A pop up window will

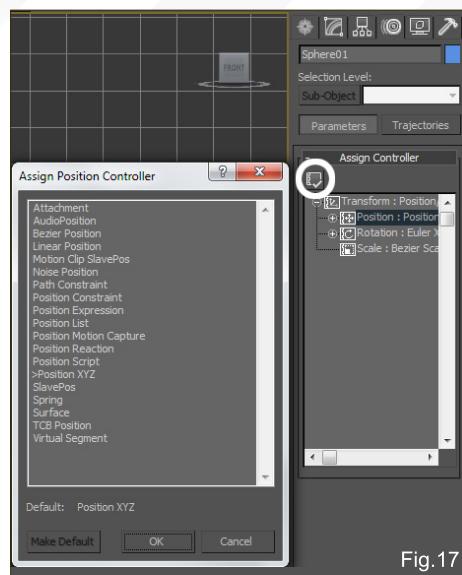


Fig.17

appear for you to select the one you want to use. (Fig.18)

Note: By default Max assigns to a newly created object a Position XYZ controller, a Rotation Euler XYZ and Bezier Scale.

Both position XYZ controller and rotation Euler XYZ controller have a curve to control each axis: one for Z, one for Y and one for X.

But the Bezier scale has only one curve to control the three axis of deformation. We

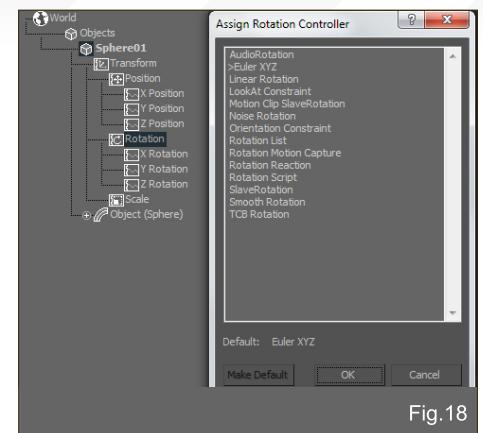


Fig.18

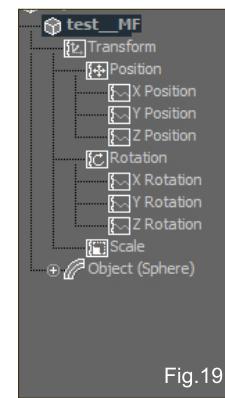


Fig.19

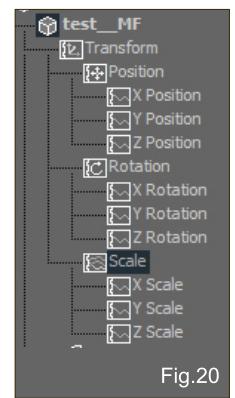


Fig.20

recommend using Scale XYZ that will make it better for the animators when scaling, as one curve by axis will give them more control. (Fig.19 – 20)

FLOAT LIST CONTROLLERS

A *float list* can be applied to position, rotation, scale, or to a single controller. (Fig.21)

A float list is one of the most powerful features that Max has for rigging. The concept is easy - you usually have one controller to manage position, rotation or scale; the float list allows you to add more than one controller to manage them. This ability of having several controllers has many advantages in complex rigging.

You can assign the float list with the **Track View** or in the **Command Panel Motion**.

Once you have assigned a float list, you can select the available channel and assign a new controller. Every time we add a controller an available will appear at the bottom of the list, which means we can add another one (please

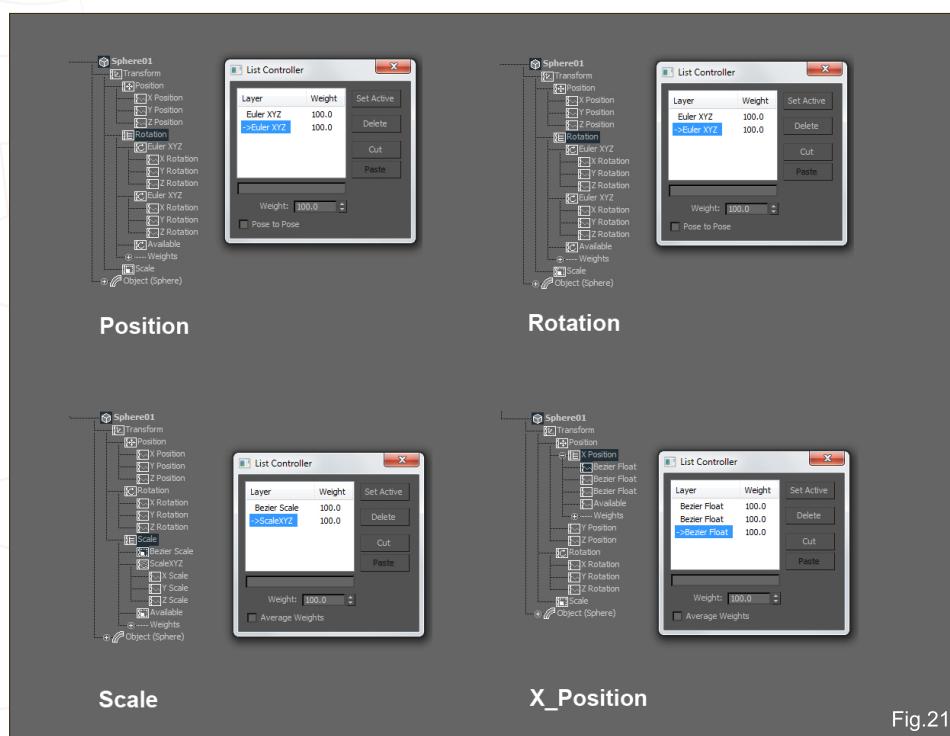


Fig.21

refer to the image below). We can add as many controllers as we want to a float list. (Fig.22a – 22b)

In order to access the properties of a float list you have to double click on this icon  and a pop up window will appear.

Each controller has a weight. With a value of 0 the controller will not work. With a value of 100 it will work normally. We will use the weight in our next chapters quite often.

There is another concept that we must have clear – the *Active Controller*. The active controller receives the values when we move the objects and is where the keys will be stored.

To set the active channel we can double click on top of the object or use the button **Set Active**.

We can change the name of each controller, and we recommend naming it with useful names rather than leaving it by default.

THE ZERO VALUE RULE

We will explain the *Zero Value Rule* with a sample. (Fig.23 – See Maxfile: **5_zerovalue_start.max**)

We have a sphere seated on a cylinder. The sphere values in position are: 0.58 in X_position, 3.375594 in Y_position and 13.561877 in Z_position.

We will move the sphere around, and if we want to go back to its original position we will have to remember the X, Y and Z original values.

This is ok with one object but when we use lots it becomes more difficult, an almost impossible task.

The best solution to go back to the default position is by using a float list.

(Fig.24)

We will create a float list, add a second controller XYZ, make the second controller active, rename the first to default and the second to animate.

The values 0.58 in X_position, 3.375594 in Y_position and 13.561877 en Z_position will be stored in the default.

The animation values are: 0 X_position, 0 in Y_position and 0 en Z_position.

Because we have done animation active whatever movement we do will go in the animation controller.

So if we move the sphere around we only have to be sure that the value of Z, Y and Z equals to 0 in animation controller to be back to the default position.

The sphere is animated and at the end it goes back to its default position, that is,

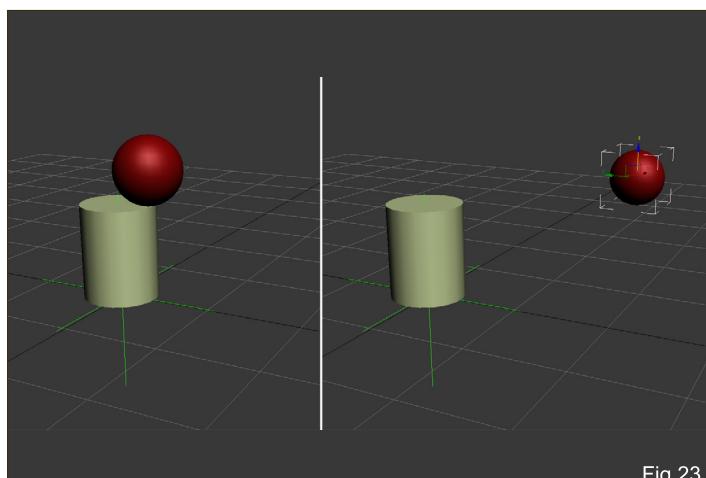


Fig.23

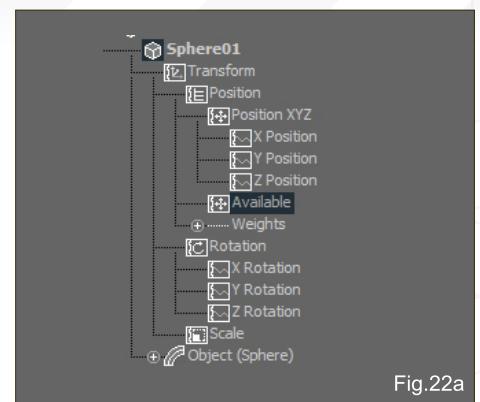


Fig.22a

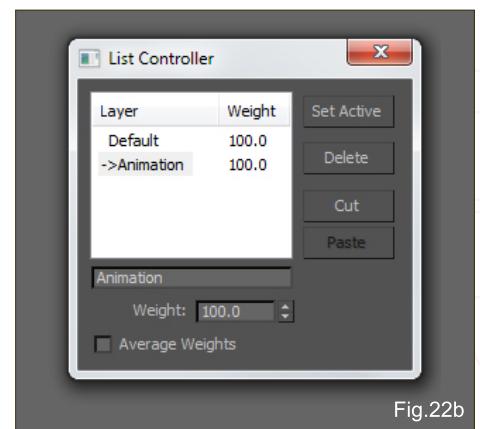


Fig.22b

value 0 in X, 0 in Y and 0 in Z. (See Maxfile: **5_zerovalue_final.max**)

The aim of the zero value rule is to make the value of the controller that we want to animate to be 0 by default. We will use the float list to achieve this.

FLOAT LIMIT

Float Limit is used in Max when we want to set the minimum and maximum values of a controller. (Fig.25 – 26)

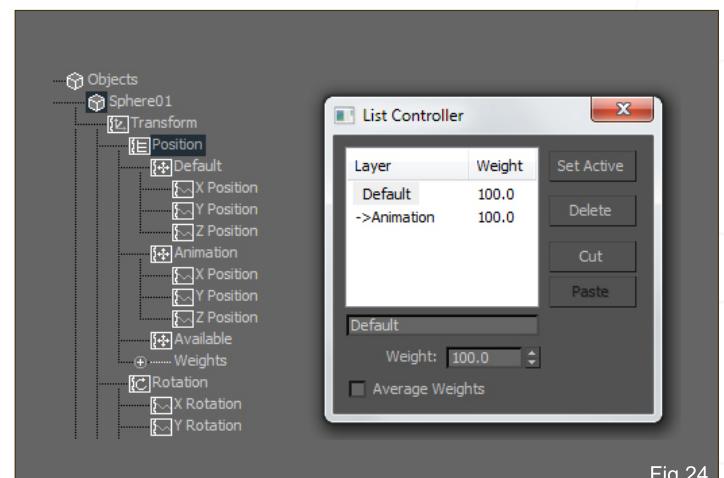


Fig.24

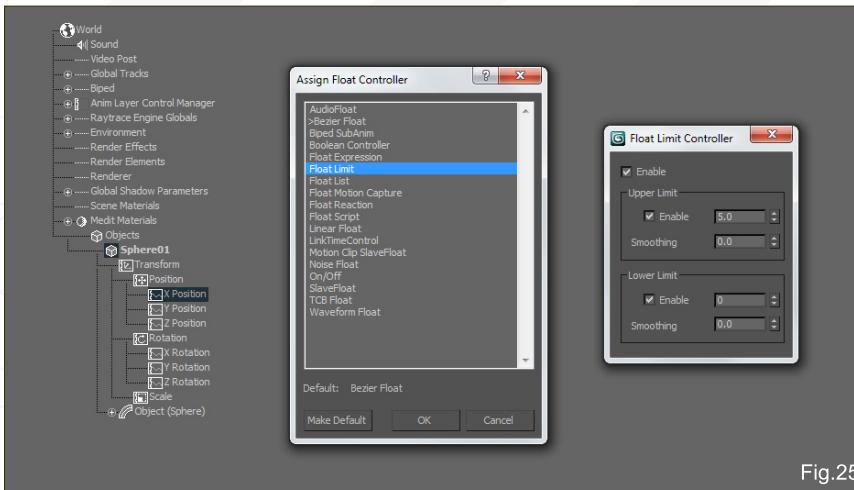


Fig.25

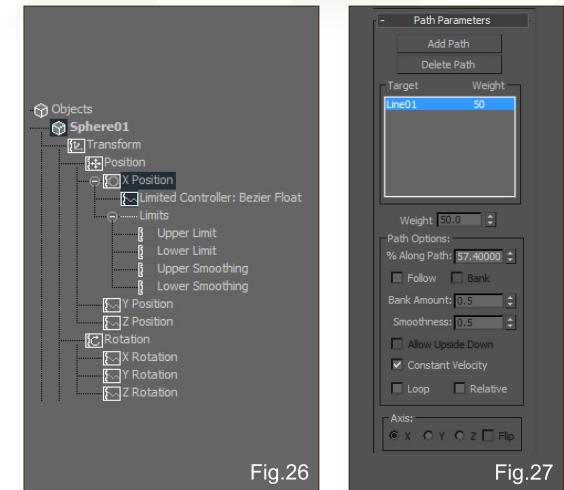


Fig.26

Fig.27

You can add the float Limit in the **Track View** or in the **Command Panel Motion**. Once you assign it a pop up window will appear and we will choose our upper and lower limit. This is the icon of a float limit. 

In this file there is a sphere that has a float limit in X from 0 to 50. If you try to move the sphere in the X axis you will realize it only goes up to 50 and you will not be able to move in the negative axis of X. (**See Maxfile: 5_FloatLimit.max**)

PATH CONSTRAIN

Path Constrain is applied to position; it will make an object stay within a path. The path must be a spline object.

The object will be moving along the path, as we mentioned. To do this we *use the % align path*: 100 is the end of the path and 0 the beginning; by changing this we can have the object in any part of the path.

The % along the path will appear as Percent in the **Track View**.

If we use the option **Follow** in the **Path Constrain** we can choose an axis that will be orientated along the path. (**Fig.27 – 28**)

Path constrain without follow. (**Fig.29 – See maxscene:5_Path_constrain.max**)

Path constrain with follow in X axis. (**Fig.30 – See maxscene:5_Path_constrain_follow.max**)

Note: be sure you delete the keys that Max creates on the percent when you apply a path constrain, it will create a key on your starting frame with value 0 and a key in your ending frame with value 100.

Note: the spline that we are constraining can be moved, rotated, scaled and deformed and

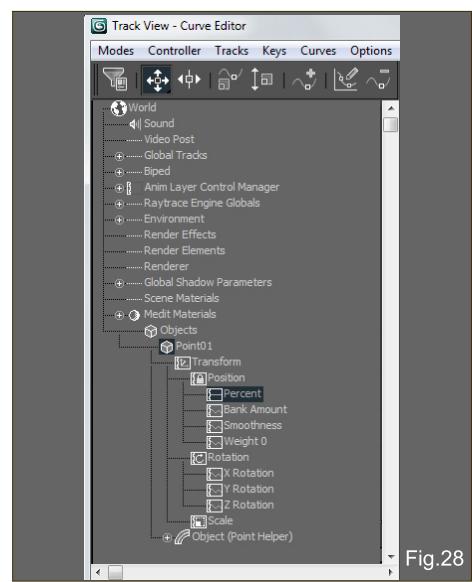


Fig.28

the path constrain will still work. The object with constrain will always be inside the spline. This is a great feature and we will use it in advanced rigging.

Note: to edit the path constrain we can only use the **Command Panel / Motion**

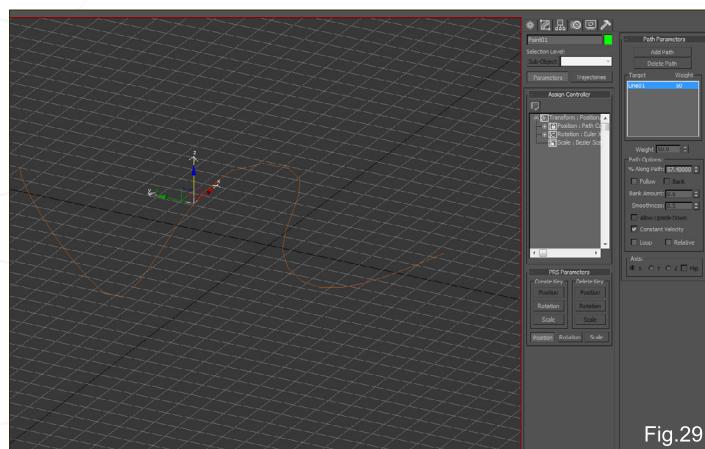


Fig.29

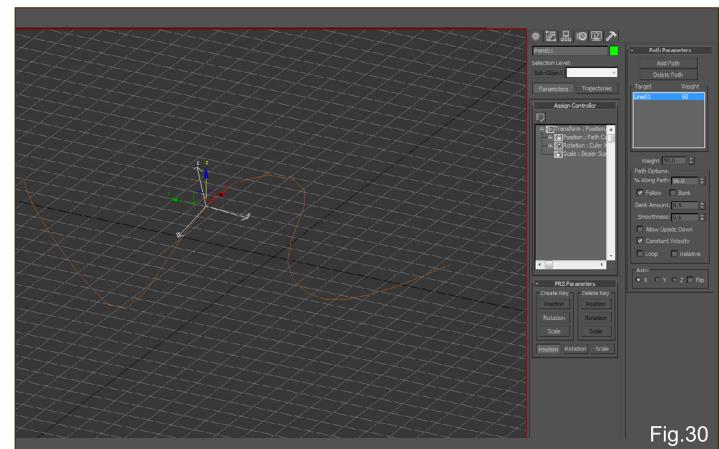
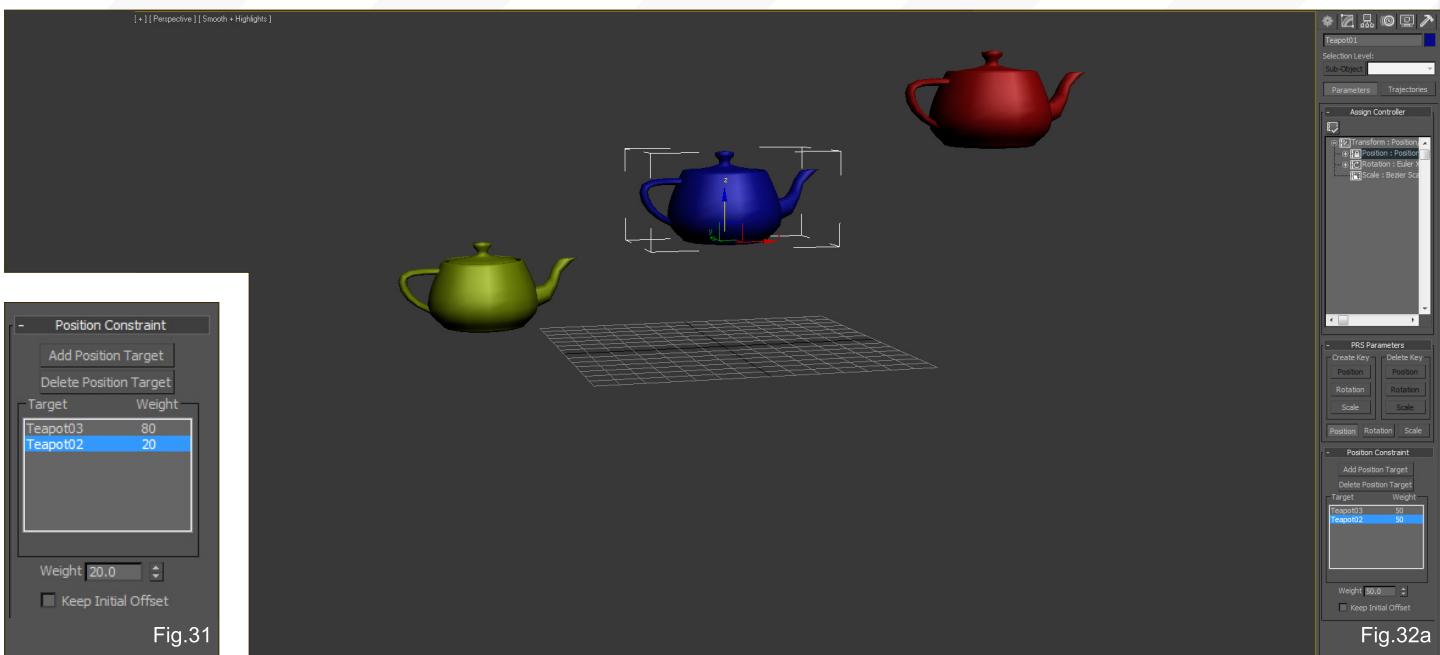


Fig.30



POSITION CONSTRAIN

Position Constraint is applied to position, and it makes an object to have similar relative position in world to another object or objects. (Fig.31)

You can add as many targets as you want, but usually we only have two targets, so the object can follow the position of other two objects. To add new targets, use the buttons for adding. You can delete a target too with the button *delete*.

Each target that we add has a weight; the total weight is 100.

On the previous image we got the 50% of the blue object's weight following the green object and 50% following the red one. This means the blue teapot will be half way between both. (Fig.32a – See maxscene: 5_PositionConstrain.max)

On the next image we have 80% of the weight following the green object and 20% following the red. So the blue teapot will always be much closer to the red one. (Fig.32b)

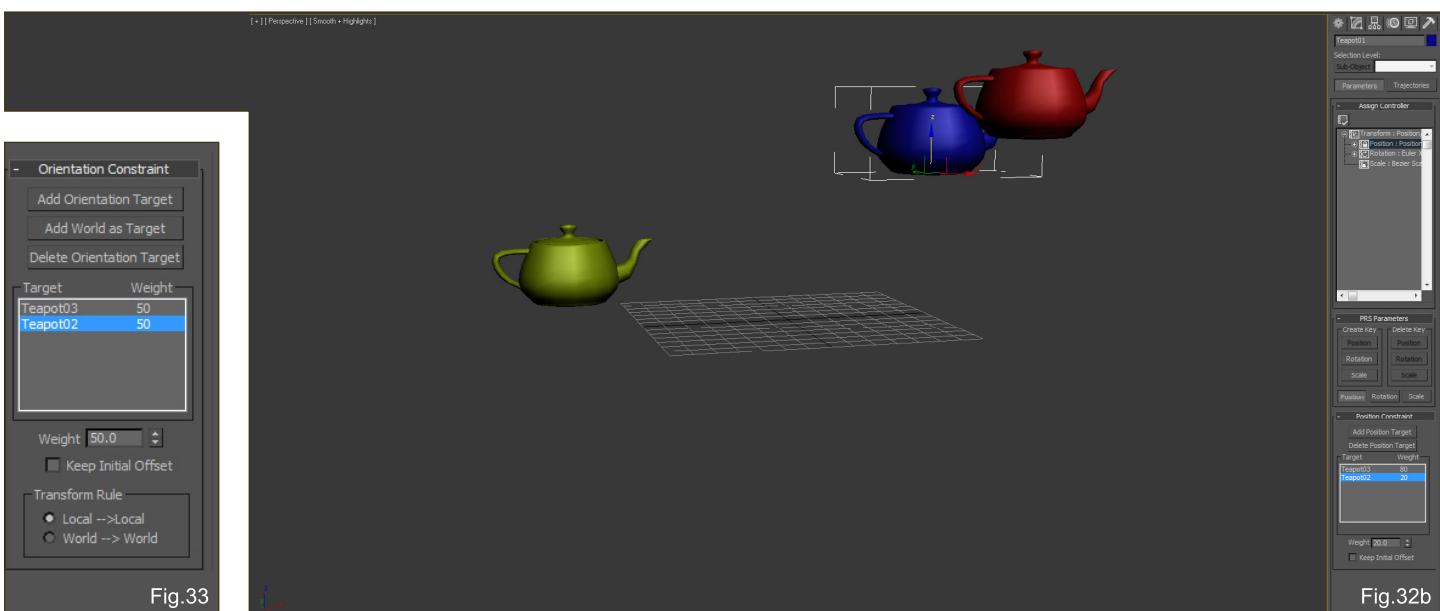
Note: the position constrain can only add or remove targets in the Command Panel-Motion,

but the weights of each target can be assigned or edited in the Track View and the Command Panel as well.

ORIENTATION CONSTRAIN

Orientation Constraint is applied to rotation, and it makes an object have the same rotation of another object or objects. The orientation constrain will follow the other object's orientation, its local axes. (Fig.33)

You can add all the targets you want, but we have two targets in most cases. To add new targets, use the buttons for adding; the world



can be added as target too. You can remove targets with *delete orientation constrain*.

Each target has a weight and the total weight must be 100. On the previous image we have the 50% of the blue object's weight following the green and 50% following the red teapot. So the blue object will always be half orientated between both. (Fig.34 – See Maxscene: 5_OrientationConstrain.max)

On the next image we have 80 % of the blue object's weight following the green and 20% following the red one. Therefore the blue teapot will show a rotation more similar to the green.

(Fig.35)

Note: the difference between the local axes of following targets can't be higher than 180 degrees; in case it goes further, the object will flip.

To understand this, just rotate the blue or red teapot in local coordinate more than 180 degrees in one axis and check how the blue teapot reacts.

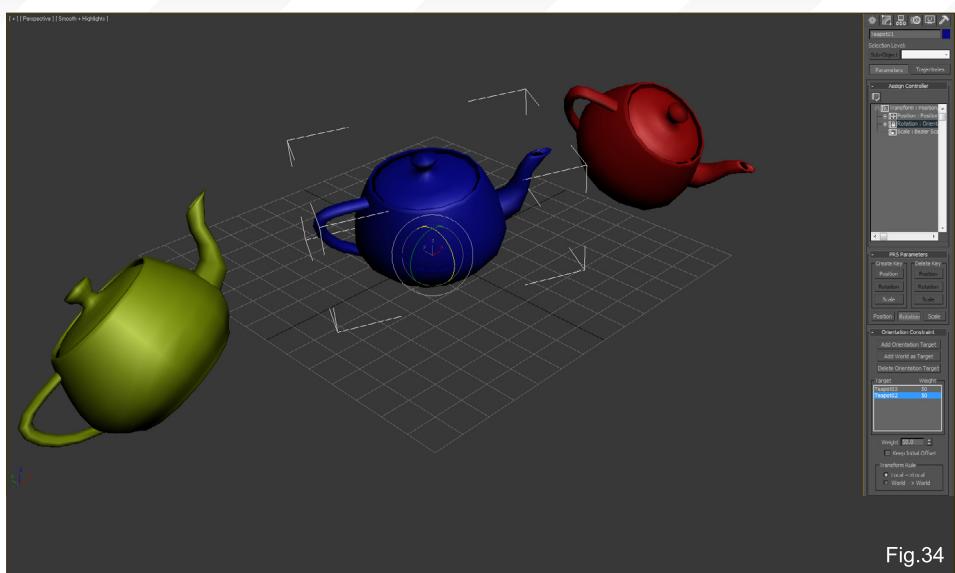


Fig.34

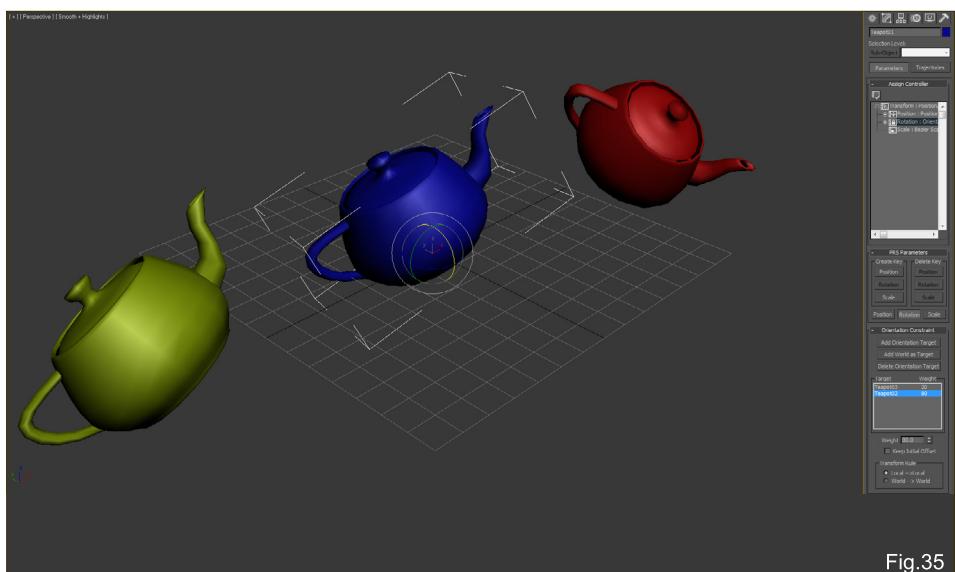


Fig.35

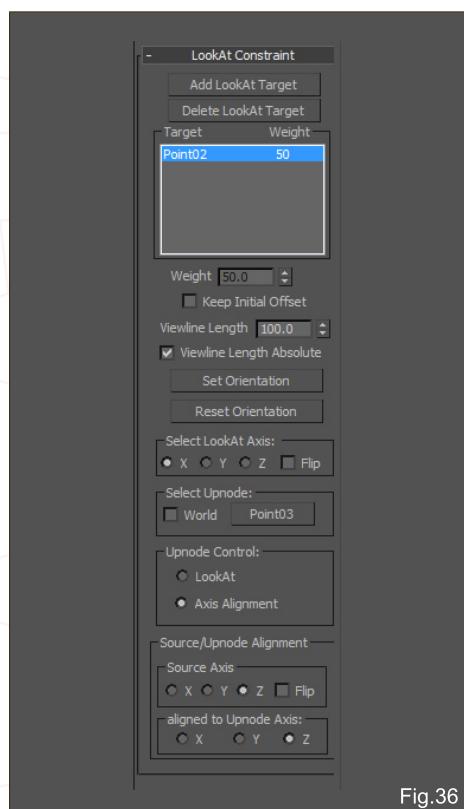


Fig.36

Note: the orientation constrain can add or remove targets in the Command Panel-Motion only, but the weights can be assigned and edited in the Track View and the Command Panel too.

LOOK AT

Look At Constrain is applied to rotation, and will make an object to look at another object. The object will be pointing to the target no matter where the target moves.

The most important thing to define is what axis will be looking at the target.

We choose that axis on the option of **Select Look At Axis**.

But by using this we have only one of the axes of the rotation setup. To define the other two axes, we use **Upnode**.

There are two ways of setup the upnode - **Look At** and **Axis Alignment**.

Upnode Axis Alignment: makes the chosen source axis to be like the upnode axis of the upnode object.

Upnode Look At: makes the chosen source axis to point to the upnode object. (Fig.36)

LookAt

LookAt in X - the target is the cross point, and Z points to wherever we put the upnode to look at.

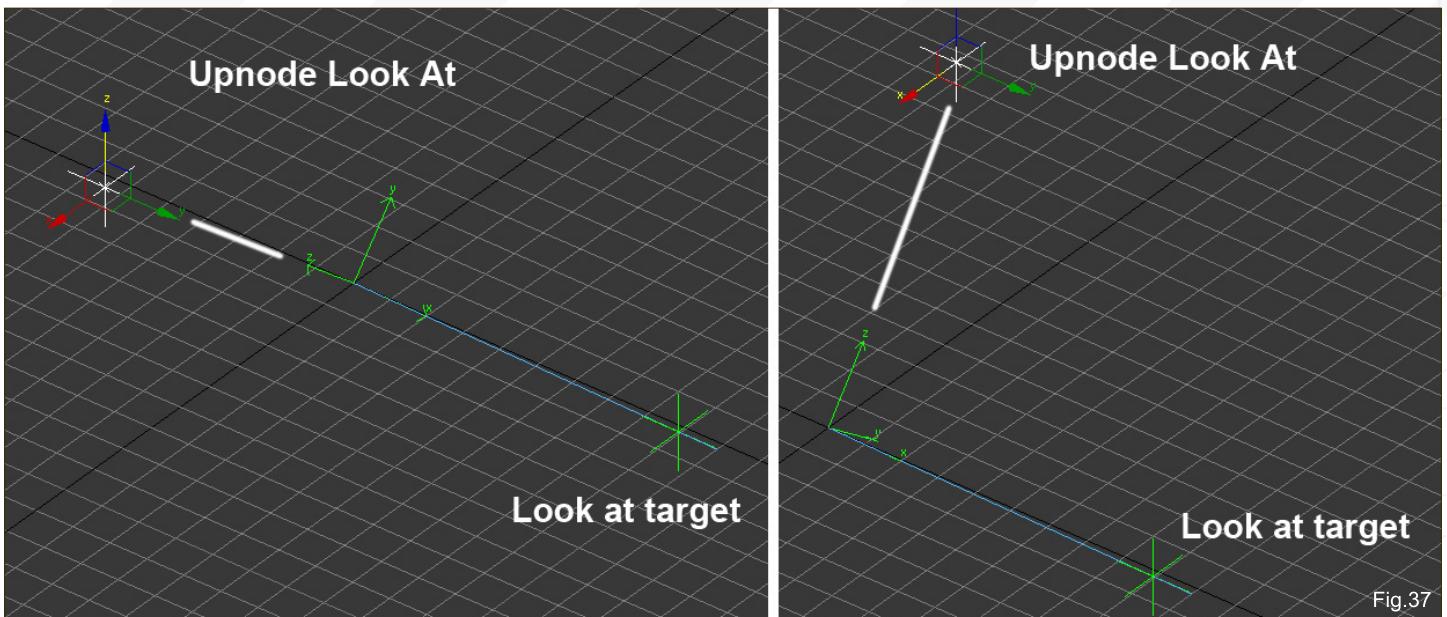


Fig.37

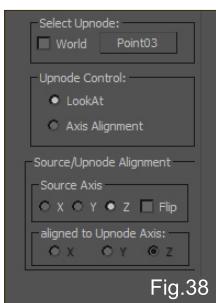


Fig.38

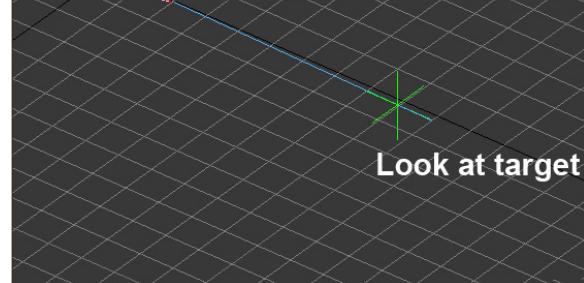
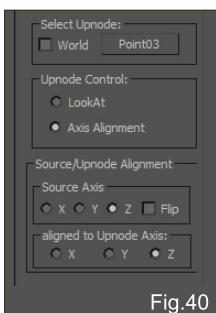


Fig.40

(Fig.37 – 38 – See maxscene: 5_lookAt_UpnodeLookAt.max)

(Fig.39 – 40 – See maxscene: 5_lookAt_UpnodeAxisAlignment.max)

Axis Alignment

LookAt in X, the target is the cross point, and Z is orientated to the axis alignment Z.

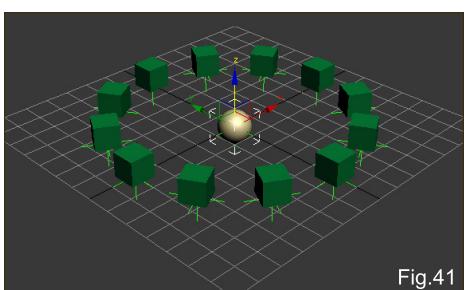


Fig.41

Note: we can have more than one target but in most cases we will use only one.

Note: the upnode is setup by default to use the world, but we recommend creating a point and using it as upnode, don't leave it by default.

WIRING AND INSTANCE CONTROLLERS

Wiring consists of a controller that manages another controller.

To understand it, just look at the next image, where there is a bunch of boxes surrounding a sphere. (Fig.41 – See Maxscene: 6_Wiring_circle_star.max)

We want the Z position value of the sphere to move the Z position value of the surrounding boxes.

To achieve this, we will use Wiring. Right click on the sphere and a quad will appear, select the wiring parameters, another pop up will appear and we will choose the *transform /position/ Z position*; then select any of the boxes and a

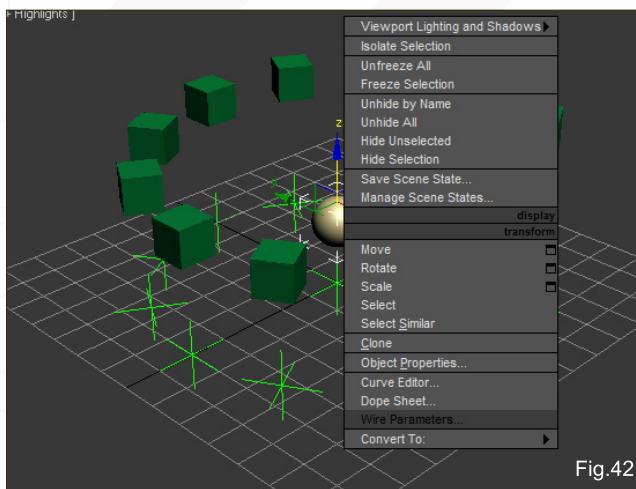


Fig.42

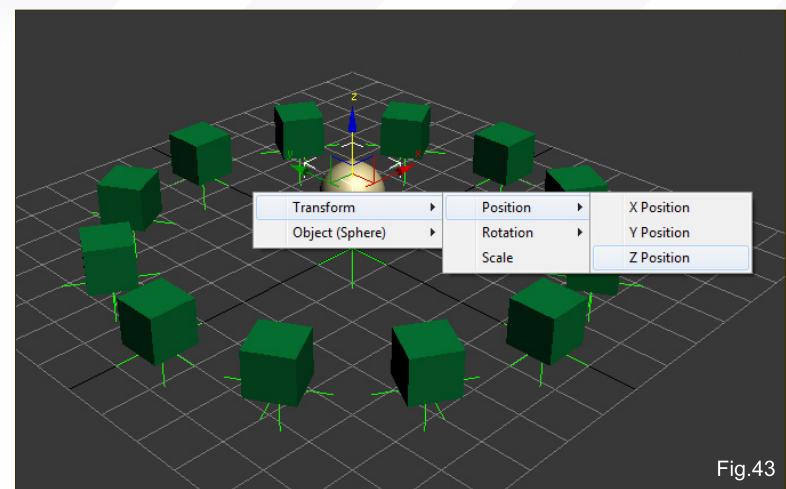


Fig.43

similar pop up will appear, choose the same again – *transform / position / Z position*.

(Fig.42 – 43 – See Maxscene: 6_Wiring_circle_wired.max)

After that, select the sphere's Z position and the box's Z position; the wiring parameter will appear.

We will get the sphere in one side and the box in the other, we will choose the arrow on the right; we make sure that we connect the sphere with the box by pressing the *connection button*.

(Fig.44)

Two Ways Connection means that you can move any of the two controllers that are wired

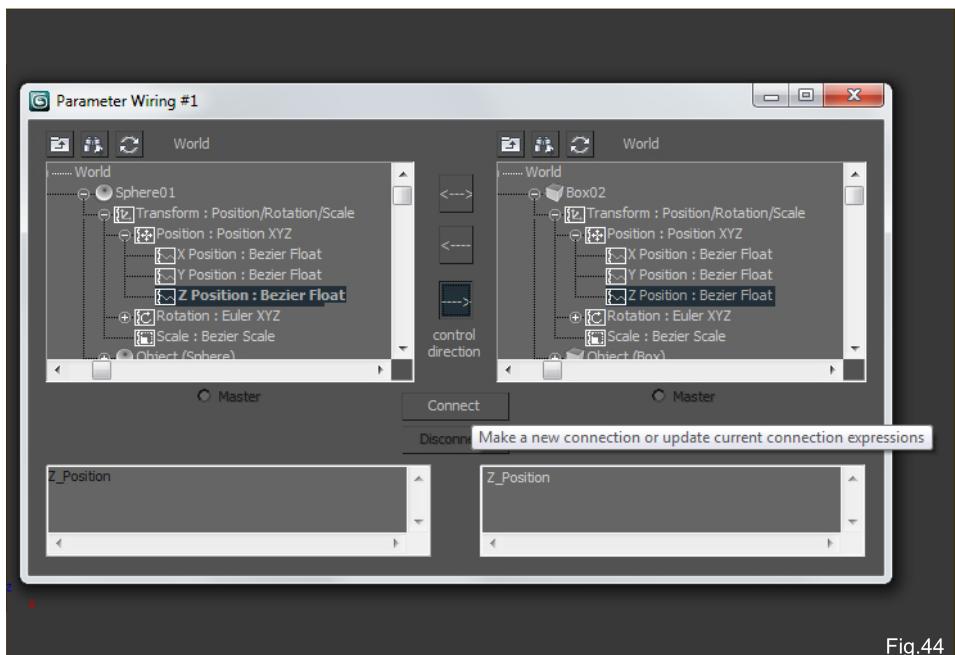


Fig.44

and it will move the other one as well. The only problem happens when we animate – the keys will be saved in one of the objects only, so you will have to select the master object to edit the keys.

That is why *Instance the Controller* is better than *Two Ways Connection*, because it allows animating any of the two objects and editing them with both controllers.

In order to instance a controller we use the Track View. Just select a controller and right click, and on the popup menu choose *Copy*, then select the other control that you want to instance and right click on it and on the popup menu choose *Paste*, finally, on the last popup

menu choose *Instance*. With this we have the controller instanced. (Fig.45)

The expression that connects a controller with the other controller can be more complex, ie. we can multiply, divide and do much more complex actions. To illustrate this we will multiply the Z position by a number so that between each box the number will be 10% higher than the previous box. (Fig.46 – 47 – See Maxscene :6_Wiring_circle_expression.max)

The final result is that each box is located a bit higher than the previous one.

Note: To edit a wiring you can double click on the wiring in the Track View and it will open the

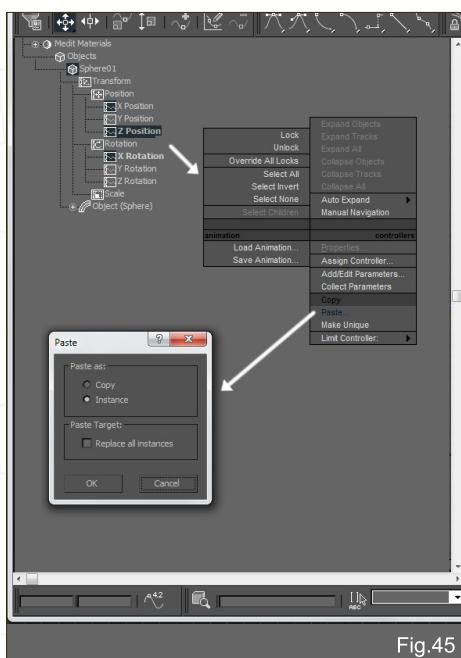


Fig.45

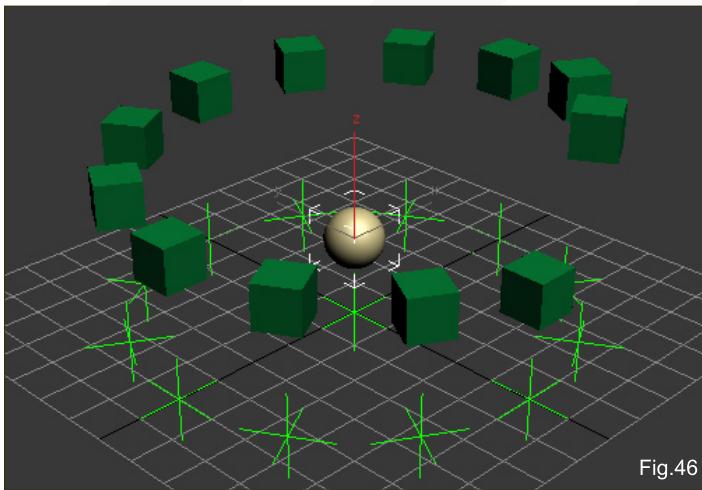


Fig.46

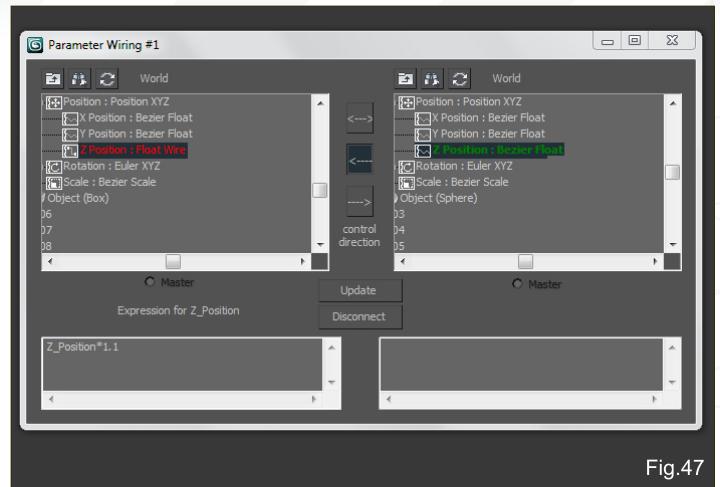


Fig.47

wiring with the exact objects and expression. To be able to do this both objects need to be not hidden. (Fig.48)

BONES AND POINTS

Bones and points are the most used objects in rigging.

POINTS

A point needs to be created in the **Command Panel / Create** and in the category **Helpers**.

The good thing about points is that they have different displays that help to customize the object as we want. Another advantage is the property size, so we can make the point bigger or smaller in case we need it. (Fig.49)

Note: some people use Dummy but we do not recommend it because Dummy cannot have wirecolor assigned, and also once it is

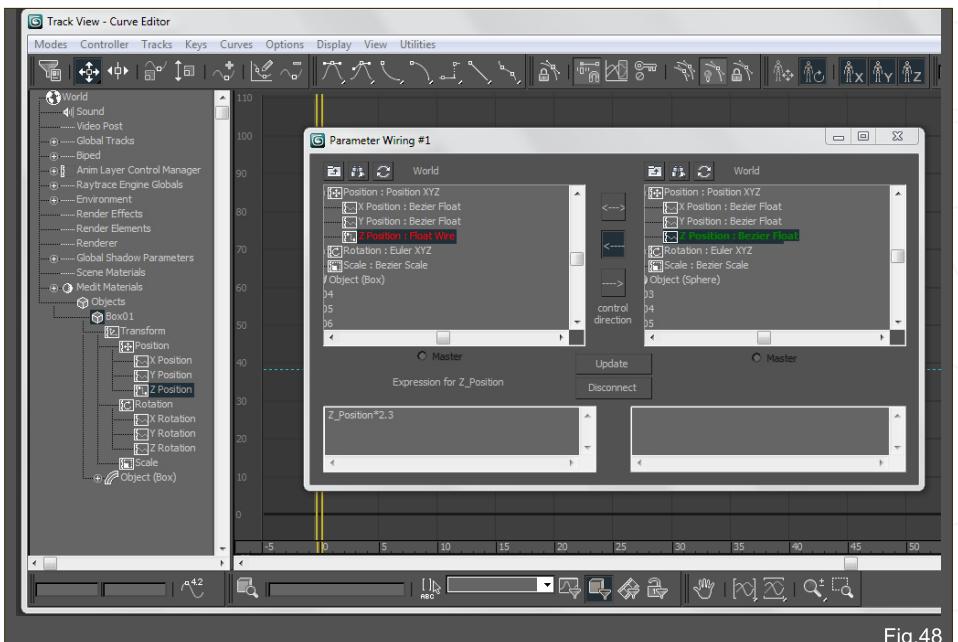
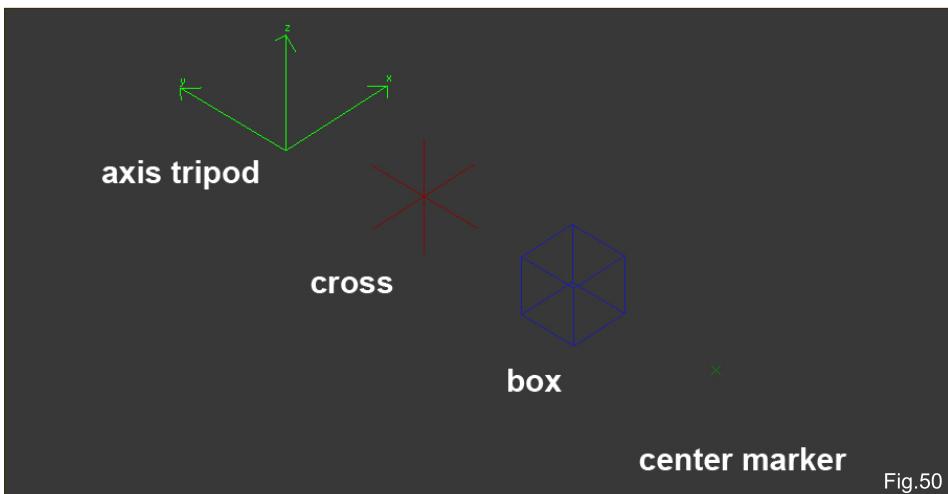


Fig.48

created we cannot change its size or custom its display.

Fig.50 shows the types of display for a point.



center marker

Fig.50

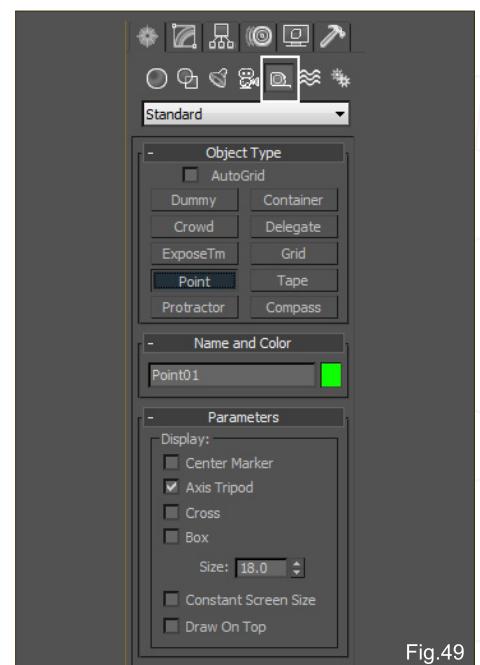


Fig.49

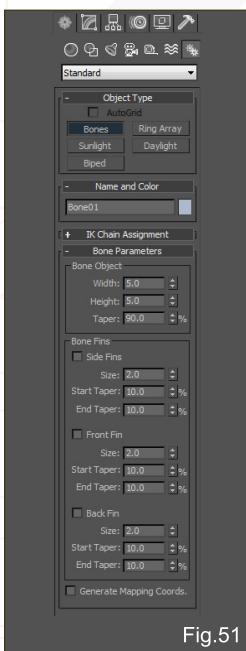


Fig.51

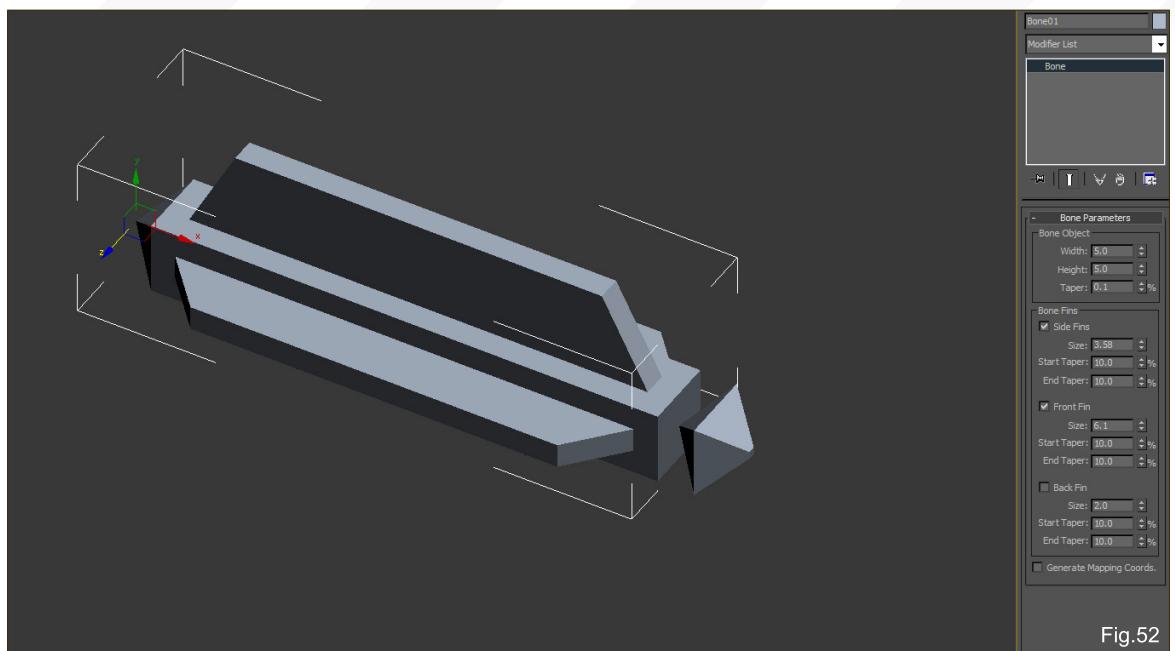


Fig.52

BONES

(Fig.51 – 52) A bone needs to be created in the Command Panel / Create and in the category **Helpers**.

Bones are the best object when we need chains in Max, good for FK or IK changes.

Bones can have lots of properties that will help to visualize them.

Side Fin is always in the local axis Z of the bone and **Front Fin** in the axis Y positive.

Having fins checked on will help to quickly visualize the orientation of a bone.

To edit bones use the menu **Animation / Bone Tools** (Fig.53)

This tool is quite handy to edit bones or properties. It is very useful when you want to edit the fins of a lot of bones all at the same time. Or when you want to add more bones to a chain or edit them.

We will not explain the bone tool thoroughly, as we said before Max has a proper documentation that explains each tool in detail. So please check by yourself what each option of this tool does.

In the next chapters we will explain this tool if needed.

Note: be careful with the viewport you choose to create a bone, as the Z axis of the bone will be always pointing to the chosen view. It will not be the same to create a bone in front, top or left view.

Note: if you want to know the length of a bone, it will be the X value in position of the next bone in the chain.

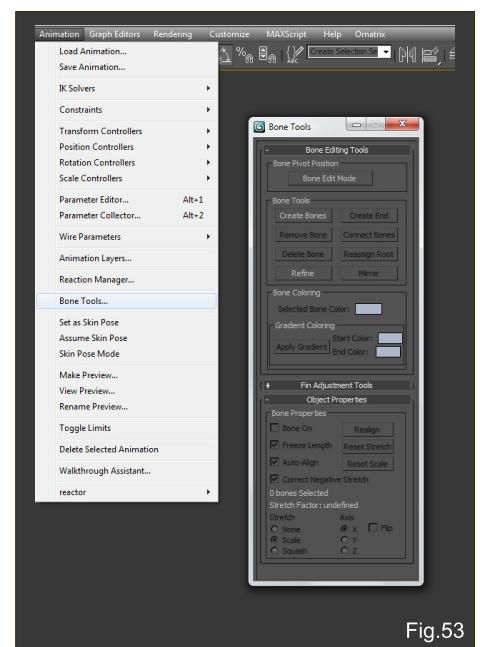


Fig.53

CUSTOM ATTRIBUTES

Custom Attribute is a parameter we use to manage a particular controller or property in an easy way.

Custom Attributes are normally used to be connected with **Wiring**. First of all, we create them in an object and then we connect it to the property or controller we want that custom parameter to manage.

To add a custom attribute go to the menu **Animation / Parameter Editor** (Fig.54)

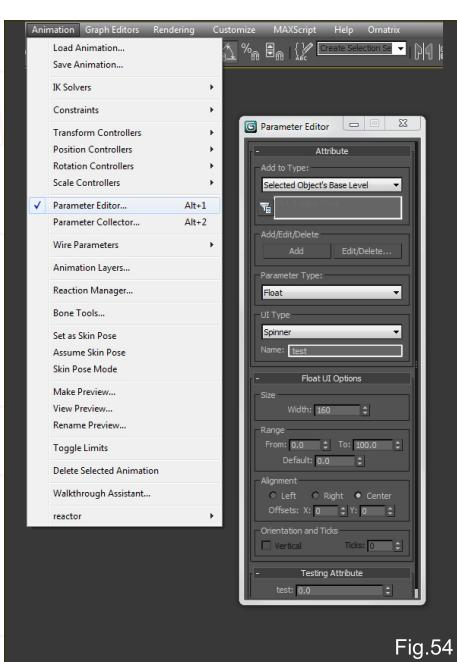


Fig.54

The following images show a sphere linked to a point. We want to change the property radius of the sphere, but we don't want to select the sphere to do so, so the easiest way is to add a custom attribute to the point with the radius and connect this parameter to the radius of the object sphere by using wiring. (Fig.55 – 56)

We can use the point to move, rotate and scale the sphere, and by means of the custom attribute we can change the radius of the sphere, so all the controls stay in one object only.

Custom Attribute helps to add parameters to an object and manage lot of things by editing only one object. Simplicity is a must in rigging.

We will speak about the types of attributes when we use them on the next chapters, it is always

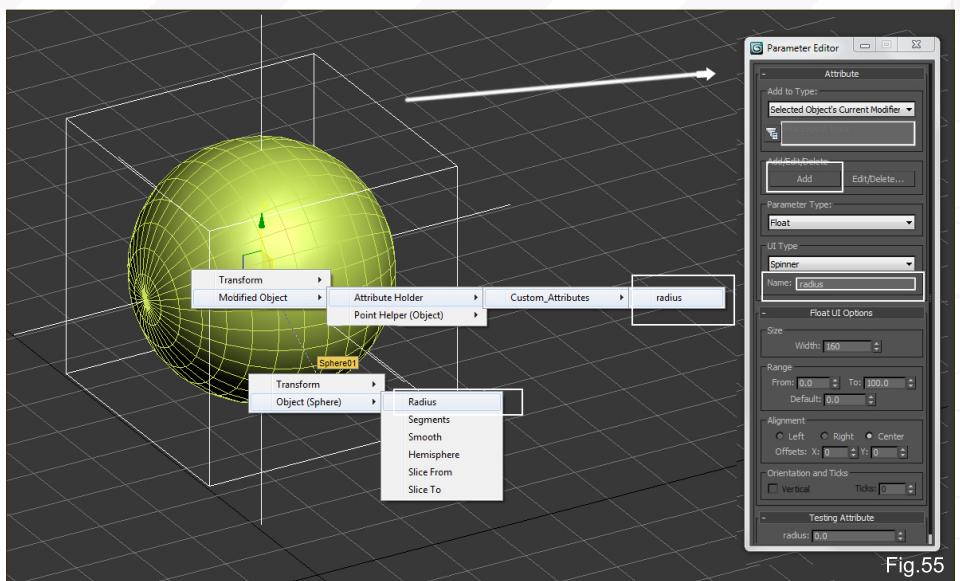


Fig.55

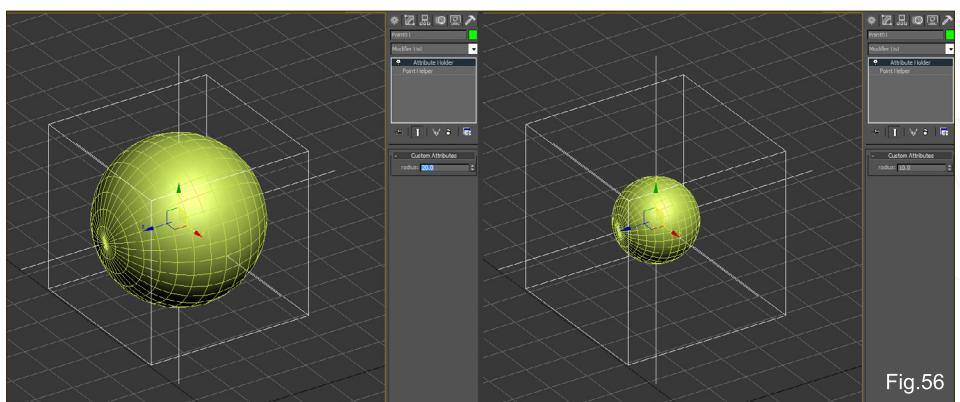


Fig.56

easier to explain it on a proper sample, and what better sample than a rig itself.

We can create or add parameters to any object or modifier, so we can decide where we want to have them. We usually access to through **Command Panel / Modifiers**.

MODIFIERS:

So far we have seen how to move, rotate or scale objects, but we can deform object too.

To do so we use modifiers, see the next image for a quick sample of deformation with modifiers. A simple definition of deformation - the change of the position of the vertices in a geometry.

All the modifiers are created or assigned in the **Command Panel – Modify**. We have a long list of modifiers we can apply. We are going to explain the most used in rigging. (Fig.57 – 59 – See Maxscene: 9_Modifiers.max)

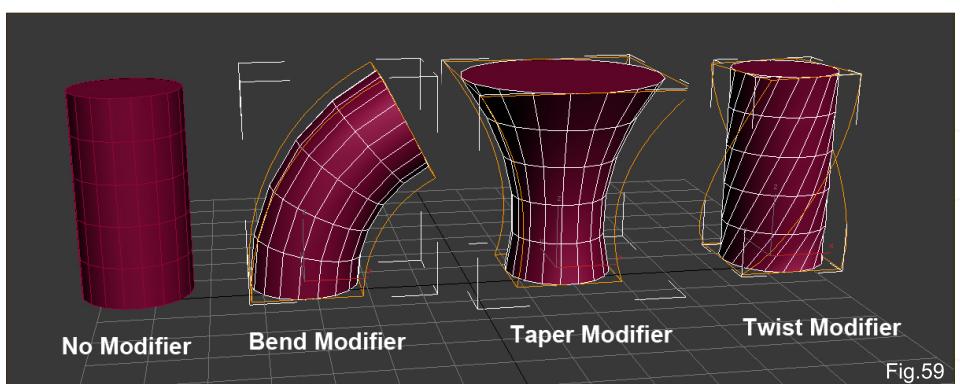


Fig.59

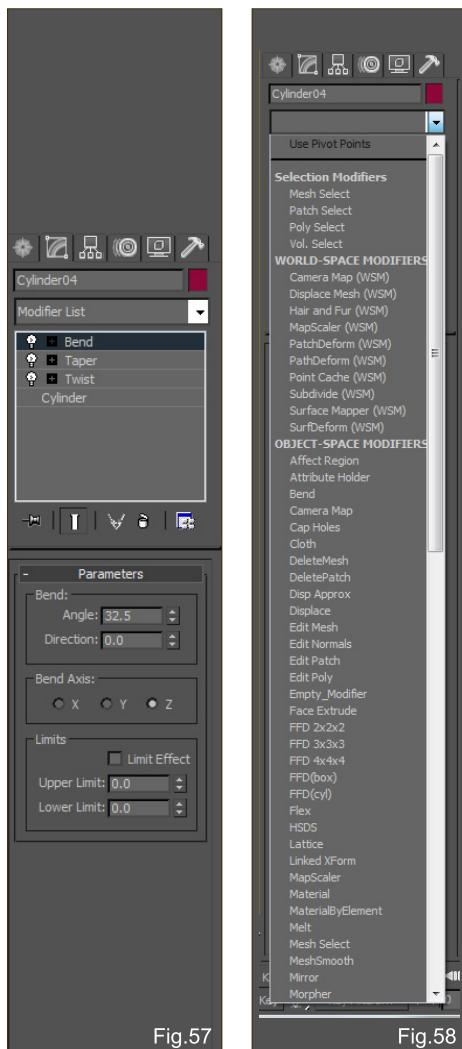


Fig.57

Fig.58

MORPHER

We will use this *Morpher* mainly for facial animation. We can model different expressions and use it to animate each one. We can have a hundred different expressions loaded. (Fig.60)

The image above shows a morpher that we use to move the brows up and down.

Note: we can animate in the morpher modifier, but to keep things simple we normally create a spline with custom attributes and connect it with the morpher with wiring. It avoids having to select the mesh to do facial animation. As we mentioned in chapter one, a good practice is having all the controls of the rig as splines



Fig.60

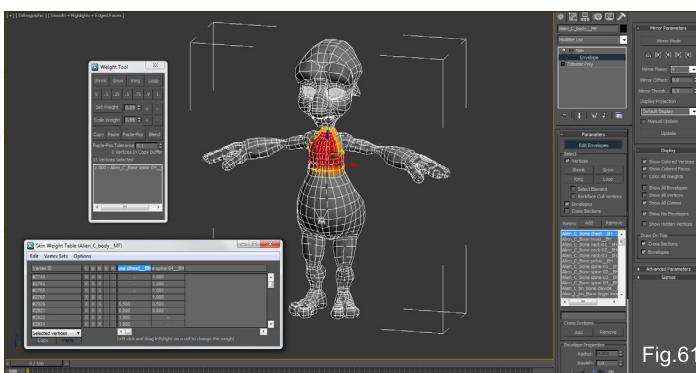


Fig.61

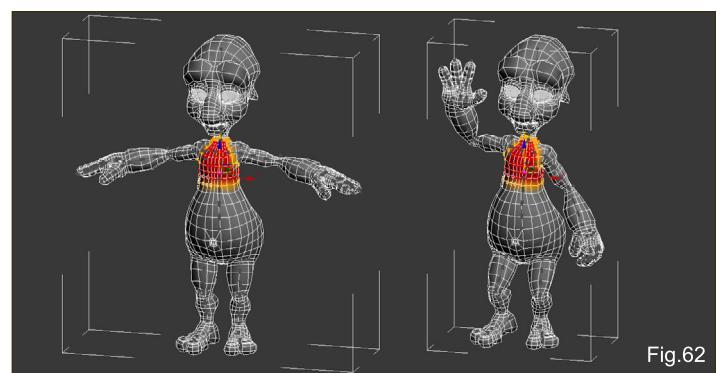


Fig.62

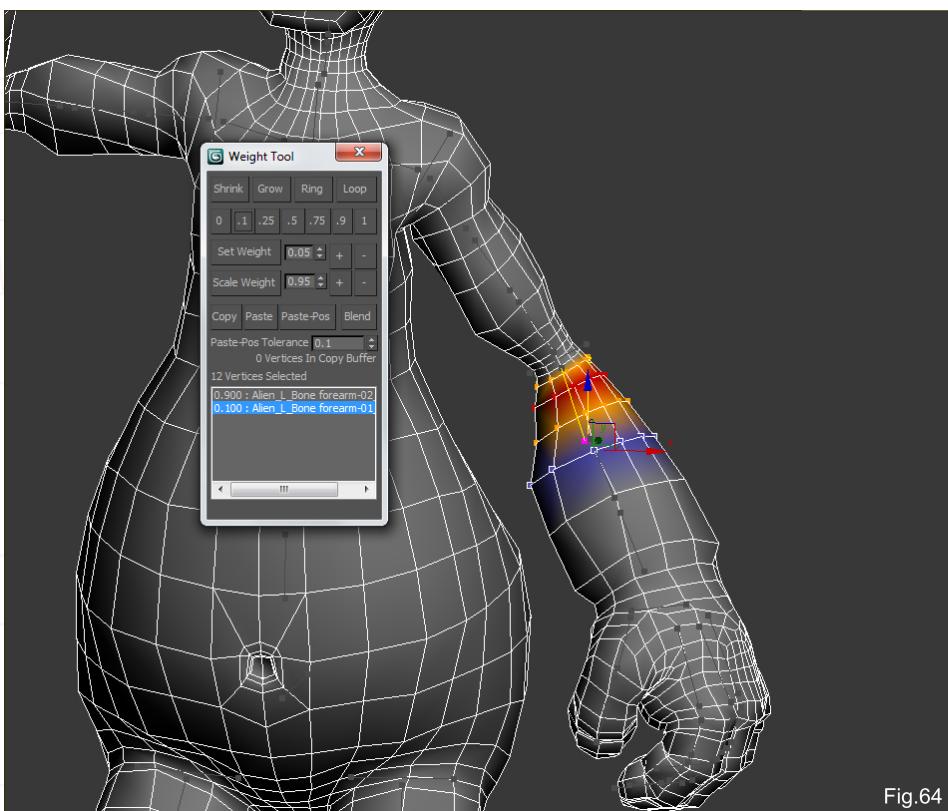


Fig.64

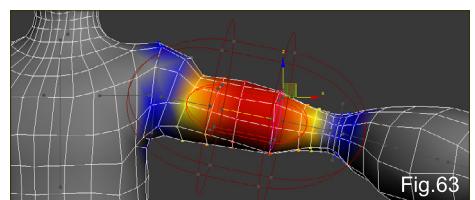


Fig.63

SKIN

Skin is the modifier we use to make our meshes deform with the rig. Is a complex tool with a few sub-tools as *Weight Editor* or *Weight Tool*, *Symmetry*, etc. We can add as many object as we want to deform the mesh and we can tell how much this object will affect each vertex. (Fig.61 – 62)

There are two ways of weighting: *True Envelopes* and *Vertex Weighting*. We normally use a combination of both.

Envelopes (Fig.63)

Vertex Weight (Fig.64)

Envelopes: each object has an envelope that we can modify making it smaller or bigger and it will influence each vertex it has inside. Envelopes are normally used for a quick skin or to start the deformation.

Vertex Weight: it edits each vertex and tells what object or objects are going to be driven the vertex's position.

SKIN MORPH

Normally we make a good skin that would work in 80% of the poses, but in some extreme poses we need to define the deformation a bit further. To do this we use *Skin Morph*.

Skin Morph works on top of skinning and we can model to correct the mesh. Each morph gets launched by the rotation of an object. The correction will be working 100 % when the angle of the rotation is equal to the one we setup, and it will fade off when the angle is not the one setup for the correction.

With this way of setting up the correction will happen when we are in the desired pose only. (Fig.65 – 66)

The images show the difference between having skinmorph or not. We used skinmorph to correct the shape of the elbow.

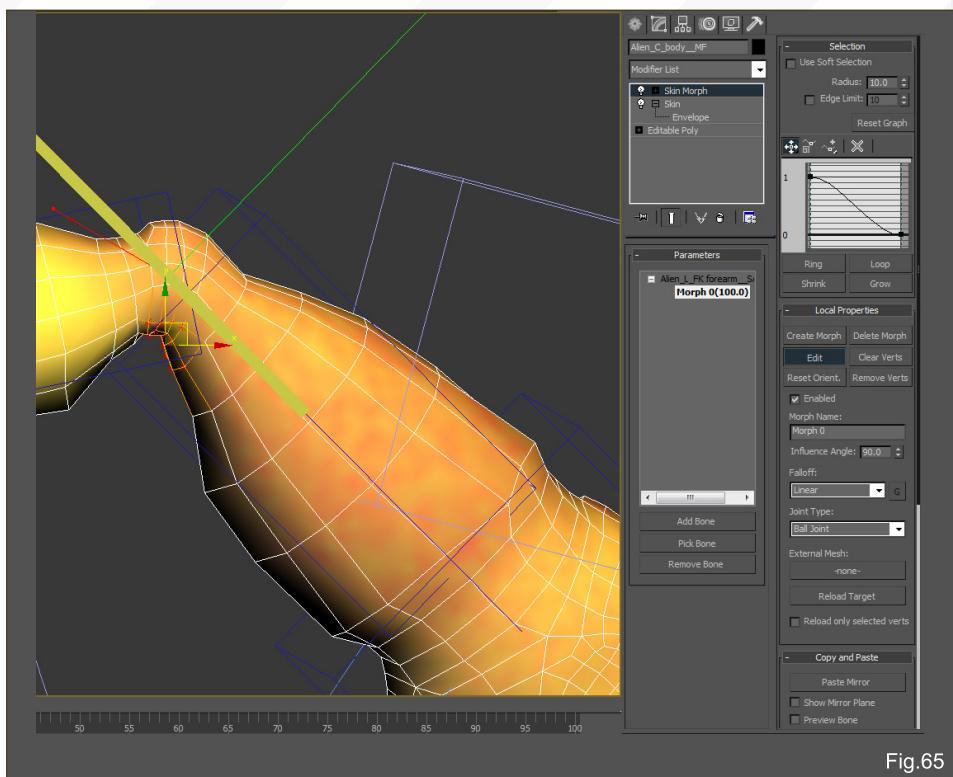


Fig.65

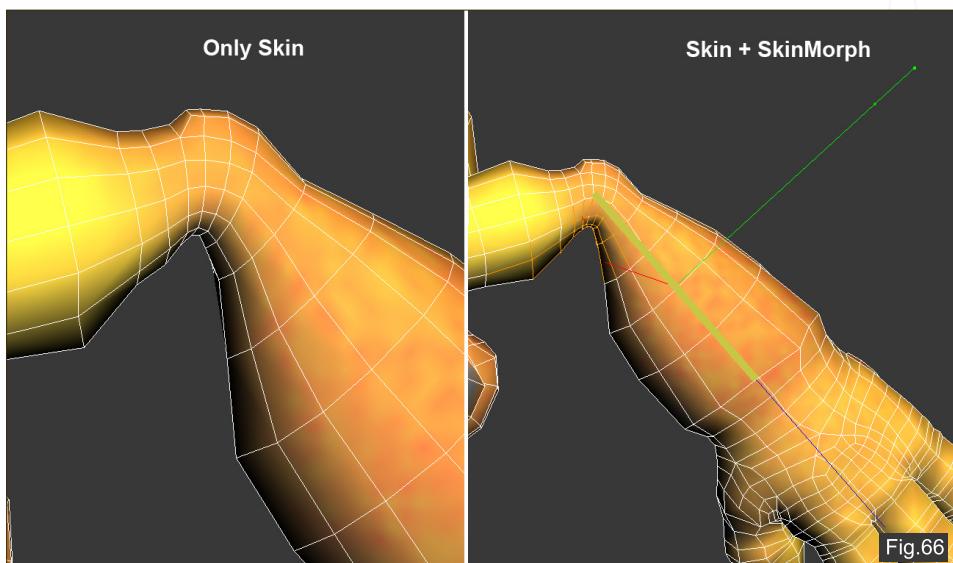


Fig.66

THE STACK IN MODIFIER PANEL

(Fig.67) The *Modifier Panel* works in stack, which means that we can have a modifier on top of another. The idea of a stack modifier is that the modifier will affect all the modifiers it has below but not the ones it has on top.

So the order we put the modifiers is very important.

The image shows a typical stack for a mesh in a rig.

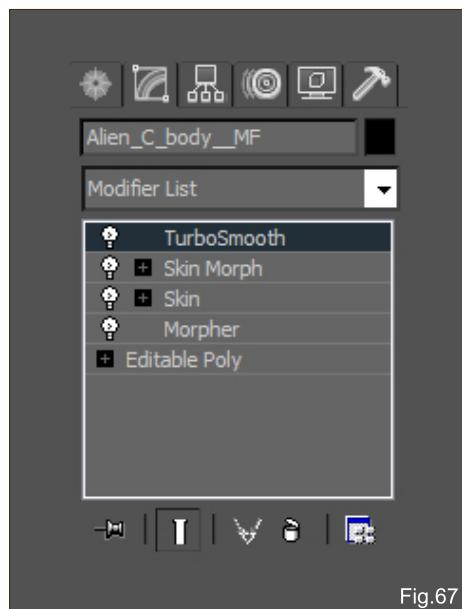


Fig.67

The first modifier is the *morpher* used for expression, on top the skin modifier that deforms the mesh and makes it follow the rig, the next one is the skin morph to fix some poses and finally the *turbosmooth* to make the mesh smooth and subdivided.

WORLD SPACE MODIFIERS AND LOCAL SPACE MODIFIERS

There are two main types of modifiers - *Local* and *World Space*.

Local Modifiers: applied in the local space of the object and follow the object when it moves.

World Space: not in local space and don't follow the object when it moves. The world space modifiers always have their names included (WSM) so they are easy to recognize.

Fig.68 shows a FDD binding deforming a group of meshes.

Note: all the world space modifiers are on the top of the stack, it doesn't matter if you add a modifier after having a WSM already applied the WSM will always stay on the top of the stack.

LOCKS, INHERITS, KEYABLE AND LOCK ANIMATION (MAX2010)

LOCKS

The lock can be found under **Command Panel / Hierarchy / Link Info**

What locks do is prevent an object from moving, rotating or scaling in the local axis that we select.

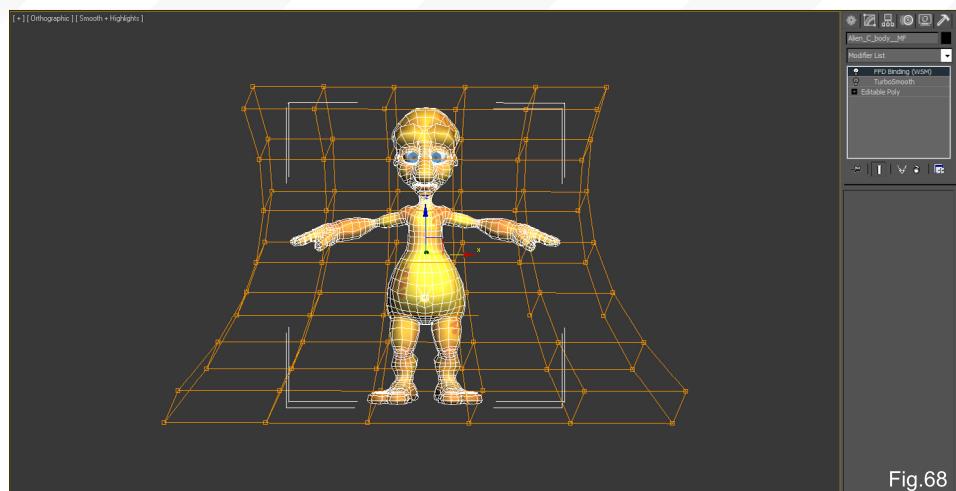


Fig.68

In the image we have locked move and rotate, so the object can be only scaled. (**Fig.69 – 70**)

Note: locks can edit a bunch of objects, all at one time.

INHERITS

Inherits can be found in the same place as the locks under **Command Panel / Hierarchy / Link Info**

Inherit is the relation between an object and its parent. We must check all the inherits. If we

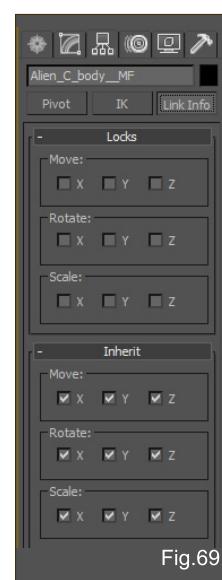


Fig.69



Fig.70

Fig.71

uncheck an axis, the object will stop following its parent on that axis.

In the **Fig.71** unchecked the move X and Y, as a result when we move the parent in X or Y the children will not follow.

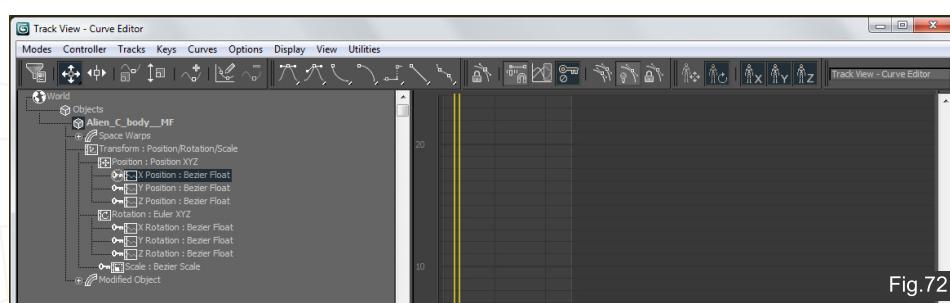


Fig.72

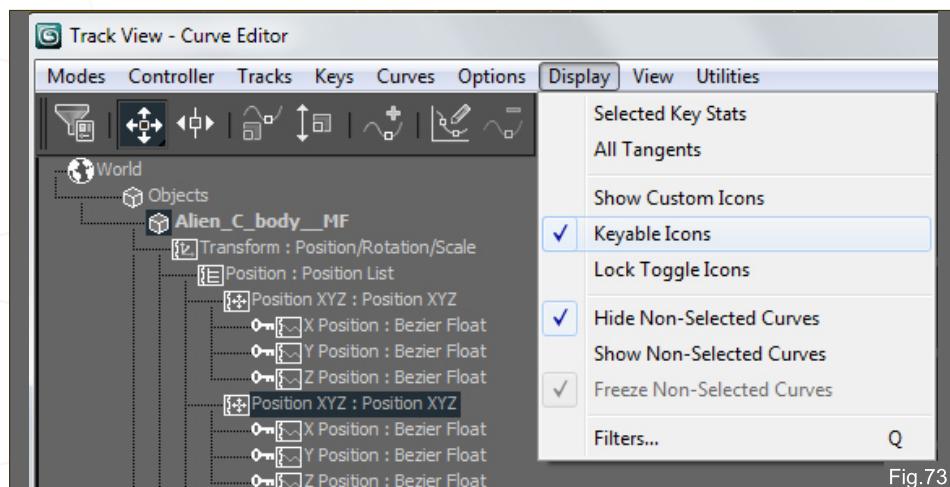


Fig.73

Note: Inherit can only edit one object at a time.

KEYABLE

Keyable means that the controller can be animated. (**Fig.72**)

Keyable icons are accessible as icons in the Track View.

They can also be accessed in the menu display and activate lock Toggle Icons (Display / Lock Toggle Icons) (**Fig.73**)

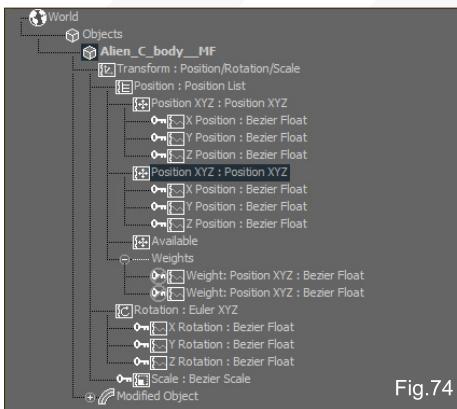


Fig.74

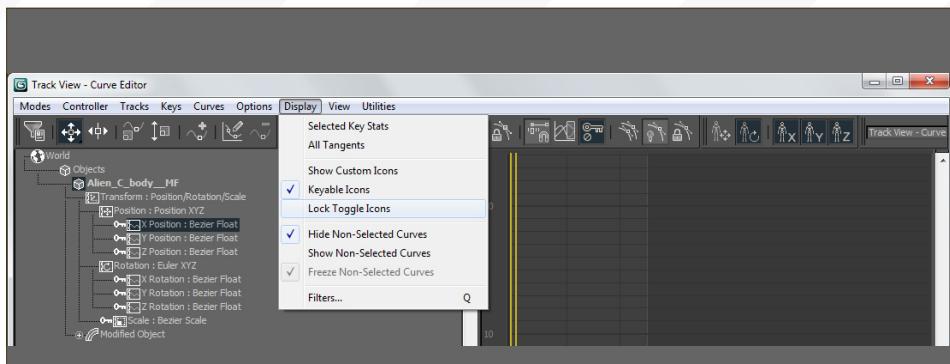


Fig.75

A key will appear in front of each controller and will be keyable by default.

If we press on the icon, it will change to *unkeyable* and the controller will not be able to receive keys.

Note: if we do not have autokey, Max assumes that we do not want to animate, and will allow us to change the value of a controller. Be careful with that and make sure that locks and keyables work together to lock an object.

Note: remember to lock the keyables for the weights on any float list. If we don't lock them, when we animate an object with a flow list, each weight will animate from 0 to 100. (Fig.74)

LOCKS IN THE TRACK VIEW

Note: This is a new feature only available in Autodesk 3ds Max 2010.

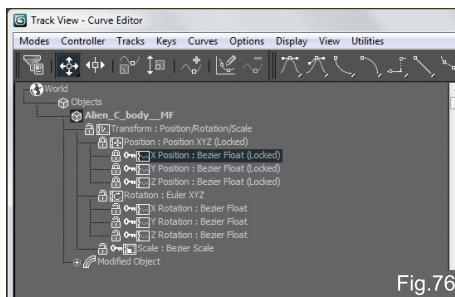


Fig.76

To access the lock in the Track View, we have to select the menu display and activate Lock Toggle Icons (Display / Lock Toggle Icons) (Fig.75)

After we do this, a lock will appear in front of each controller; the lock will be open and when we pick on it, it will change the icon to a closed lock. After doing that the controller will be fully locked.

Lock in Track View is the final way of blocking a controller, so it cannot be modified.

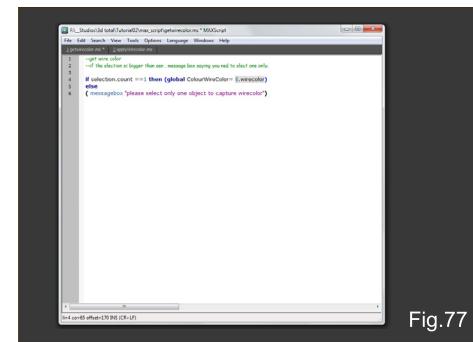


Fig.77

Once a controller is locked, it can't be moved, can't be animated, can't be changed by another controller and can't be accessed by maxscript. So locking is the best way of being sure a controller would not be modified in any way. (Fig.76)

Note: the locks in the Command Panel / Hierarchy and the ones in Track View are not related.

MAXSCRIPT:

Maxscript is the script language of Max, and it is used to code.

To work with *Maxscript* we use two main tools - the *Listener* and the *Editor*.

Listener: used to quick scripts, small tests and read the MacroRecorder.

MacroRecorder is a useful option that records maxscript command when we use Max and it is a good way of starting to read code.

Editor: saves and loads maxscript and allows editing more than a script at a time. Useful once we start making our own scripts. (Fig.77 – 78)

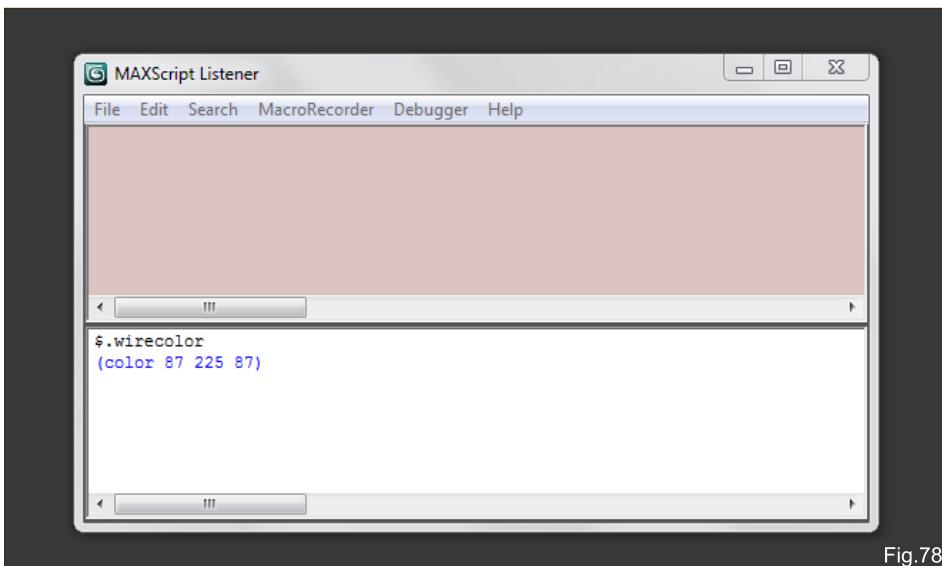


Fig.78

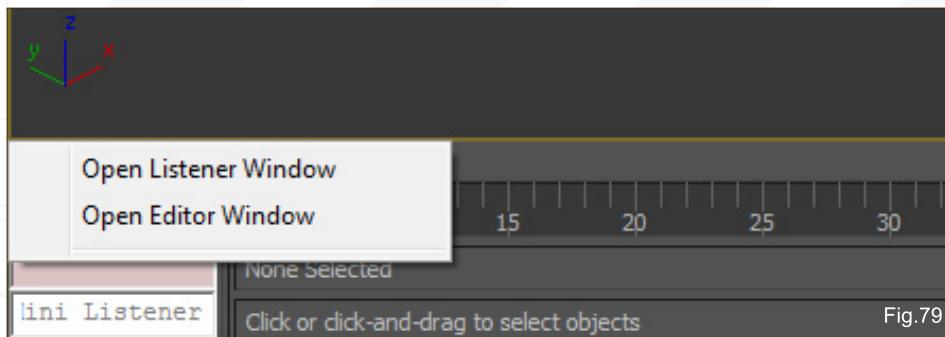


Fig.79

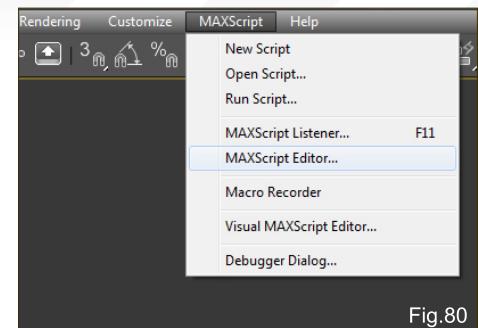


Fig.80

There are two ways of launching both - using the Maxscript menu or going to the left corner of Max, right clicking and selecting the editor or the listener on the pop up. (Fig.79 – 80)

Code might sound scaring, but it makes Max perform tasks for you, makes your life much easier and speeds up your way of working. Maxscript is a really powerful tool that allows us to optimize all the repetitive tasks.

Here is an example to illustrate this:

An action we do in Max all the time is *Setup Wirecolor* - a lot of times we use the same colour for the same type of objects. A simple maxscript would be getting the wirecolor of one object and paste its colour back to other objects. (Fig.81 – See Maxfile: Maxscript_wirecolor.max)

Maxscene: 11_Maxscript_wirecolor.max

Before we start speaking about coding, we will open the listener and activate the Macrorecorder. Then we will select and object and choose a wirecolor. (Fig.82 – 83 – See

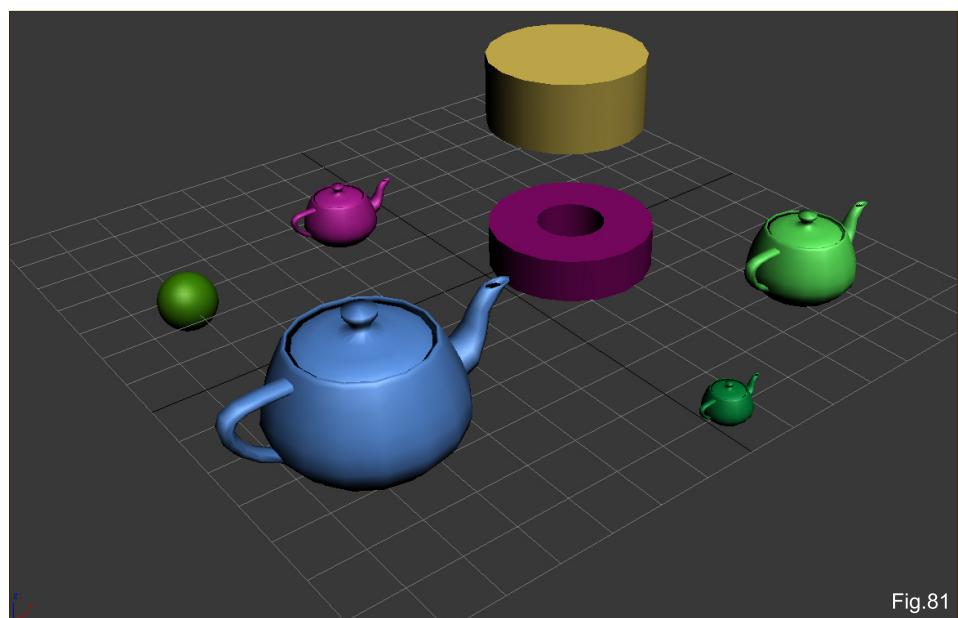


Fig.81

Maxscene: 11_Maxscript_wirecolor.max

1) Without doing anything more, we will see that the recorder shows

Select \$teapot04

\$.wirecolor = color 135 6 6

Which means that for any action we do in Max, we can do the same action in code with Maxscript. Every action in Max can be

translated into code with Maxscript. Here is the “translation”:

Select \$teapot04 means that we select teapot04
\$ means *selection* in Maxscript
.wirecolor is the property wirecolor of the objects
= setup the properties equal to whatever follows
it color 135 6 6 is the code for the colour we have chosen

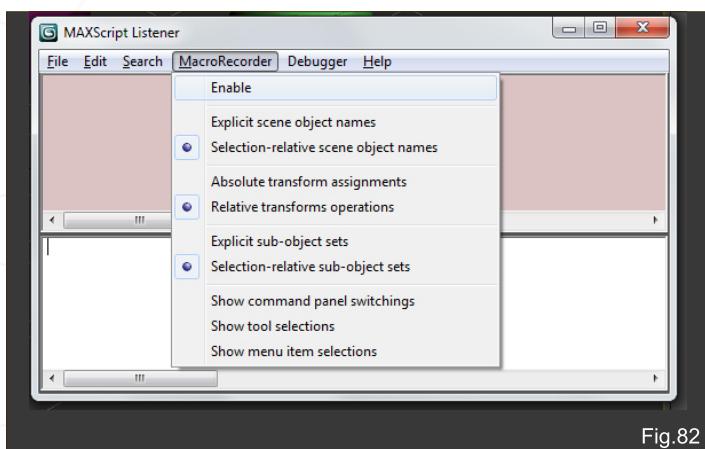


Fig.82

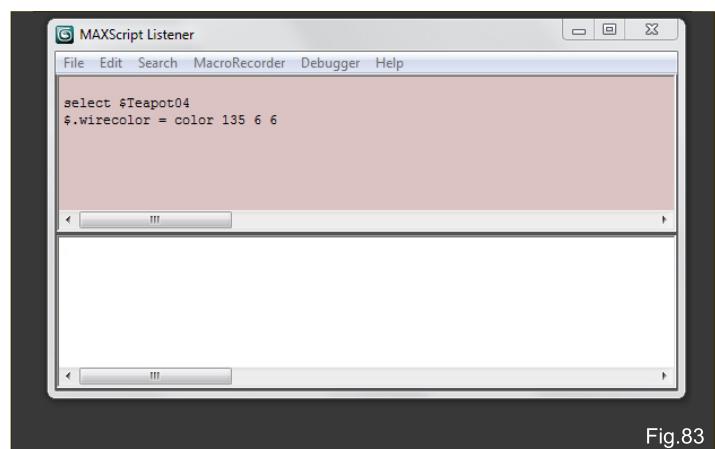


Fig.83

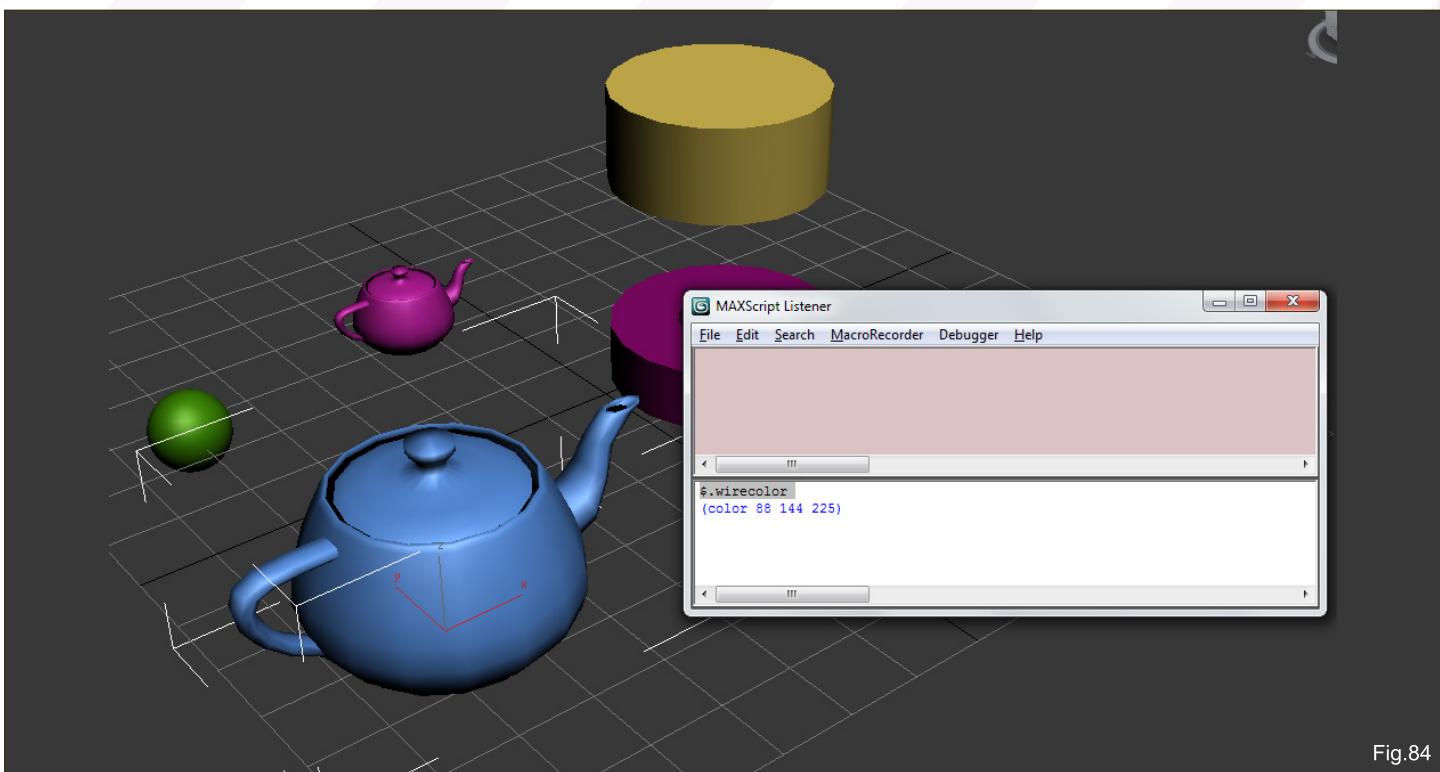


Fig.84

2) Now it is time to try our first line of code.

On the white area type `$wirecolor`, then select the line and press the **shift +enter** keys on the keyboard. The result will be a blue line like this (`color 85 144 225`)

We have just run our first line of code and the listener have returned the colour (`color 85 144 225`) Selecting a line or lines and pressing shift +enter keys evaluates the code in the listener and Maxscript gives you a line with the result back. (Fig.84)

Note: From now on we will not show images of the listener for every Maxscript sample; instead we will put the word **code:** followed by the code in black, and the listener result will be in blue. So the previous image will be

Code:

`$wirecolor`

(`Color 88 144 225`)

3) We will now save the wirecolor in a variable. Variables are what Maxscript uses to store information of any type.

Later we will be able to use the variable to paste the wirecolor to other objects.

Code:

`ColourWireColor = $.wirecolor`
(`Color 88 144 225`)

4) We will use the variable to paste the colour in another object that we select.

Code:

`$.wirecolor = ColourWireColor`
(`color 88 144 225`)

This code will change wirecolor of the object we selected.

5) So now if we select all the objects and apply the same code, every object will get the same wirecolor.

Code:

`$.wirecolor = ColourWireColor`
(`color 88 144 225`)

Instead of doing this action by hand, we can copy and paste wirecolor between objects really easily with two simple lines of code.

This is a really simple Maxscript sample, it is not meant to be an explanation of Maxscript in detail it's a simple test to get started. We recommend you to invest effort in learning it properly, there is a lot of free tutorials, forums and Maxscript help samples. In the next chapters we will be using mMxscript and speaking about it.

A good way of starting using maxscript is using Maxscript for the small repetitive tasks we normally do in Max, but coding this time.

For example, a simple script you could do is changing the radius of 80 spheres to a value of 20. To do this you only need to type a line:

Code:

`$.radius = 20`
20

LUIS SAN JUAN PALLARES

For more from this artist visit

<http://www.luis-sanjuan.com>

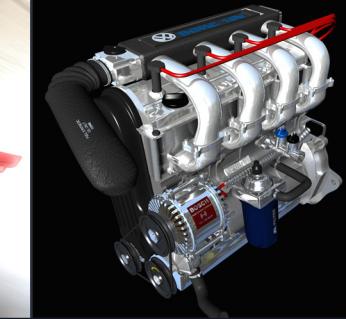
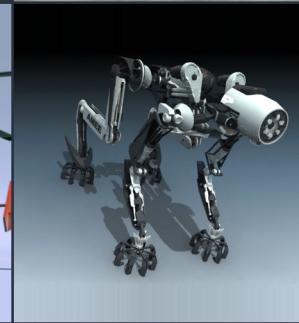
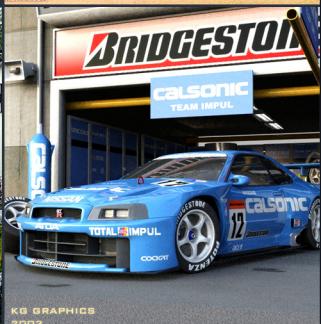
or contact

luis@luis-sanjuan.com



 **3d02.COM**
The Finest 3d Model Store

3d02.com. Commonly known as a high quality 3d model store, one of the premier stores of digital assets offering ready to use CG 3d models, and an open platform allowing artists to publish and sell their 3d models online



CHAPTER 1 | APRIL ISSUE 056

Planning your Rig

CHAPTER 2 | THIS ISSUE

Knowing your Tools

CHAPTER 3 | NEXT ISSUE

Rig Creation – Part 1

CHAPTER 4 | JULY ISSUE 059

Rig Creation – Part 2

CHAPTER 5 | AUGUST ISSUE 060

Facial Rigging

CHAPTER 6 | SEPTEMBER ISSUE 061

Scripting



INTRODUCTION TO RIGGING

The aim of these tutorials is to show and explain how you might tackle rigging your 3D character for animation. These tutorials will give help and advice to novices and experts who are looking to build on their rigging skills or approach rigging for the first time.

The series gives a detailed step by step guide as to how to approach rigging but also shows us how to tackle common problems and issues that regularly occur even in a professional environment. The artists will be reflecting on working in the industry as well as talking us through their individual approaches to creating the best rigs possible.



- FREE MODEL

THIS DOWNLOAD INCLUDES
THE MODEL USED WITHIN THIS
TUTORIAL



INTRODUCTION TO RIGGING: 2 - KNOWING YOUR TOOLS

Software Used: Maya

CHAPTER OVERVIEW

In this chapter we will explain a little about Maya's architecture and take a look at some useful tools for the rigging process in order to get the best out of them.

You will also see some tips and tricks on general rigging that will help you speed-up your rigging process a lot.

CONCEPTS

When we work with rigging we need to think: "what can we do to bring this character to life, whilst keeping it simple and clean?" Rigging is a technical process that stands between modeling and animation and our responsibility is to create simple and easily understandable controls for the animators, while keeping the pipeline clean and straightforward as possible to achieve what we need. That is why it is very important to look for references in real-life or other CG sources. A good knowledge about anatomy and movement is essential! We need to understand a little about programming too, some processes can be very repetitive and scripting these tiring parts will make your work a lot quicker and fun. If you use Maya, you should learn a little about MEL

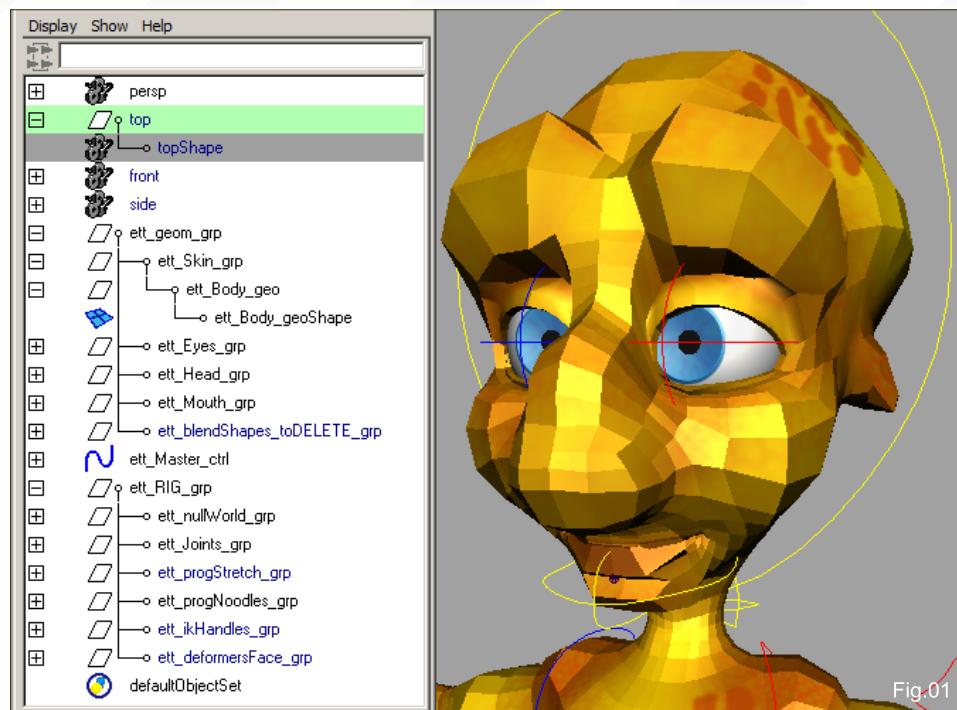


Fig.01

and Python scripting. But don't worry about all of these topics right now! We will see all of them in the tutorials.

TRANSFORMATION AND DEFORMATION

Ok, the first thing we should be aware of is how the things you see in Maya's viewport work. We won't go too technical here. For starters, this is what you need to be aware of - Every object in Maya that you can move around in the viewport has a Transform Node. These nodes are there even when you cannot see them, for example:

an empty group. The visual representation of the object you are moving is called Shape. To see this clearly open up a new scene, take a look into your Outliner and check (Display > Shapes). Click on the plus sign on the left of the top camera object and you will see it has a transform (the white box) and a shape (the camera icon) (Fig.01).

Please note you cannot move the shape without the transform, it's Maya's way to keep track of where your object is in your scene.

Now, I just said we can't move the shape without the transform, but that is not entirely true to meshes. You can move around geometry vertices without moving its transform, we will call this kind of movement deformation of components. Note that you cannot deform a camera, because its shape doesn't have components. Only edit shapes if you know what you are doing! That can lead to undesired deformations and weird pivots.

So, summing it up, Transformation is when we edit (translate, rotate or scale) entire objects. Deformation is when we edit (translate, rotate or scale) components of a mesh (Fig.02).

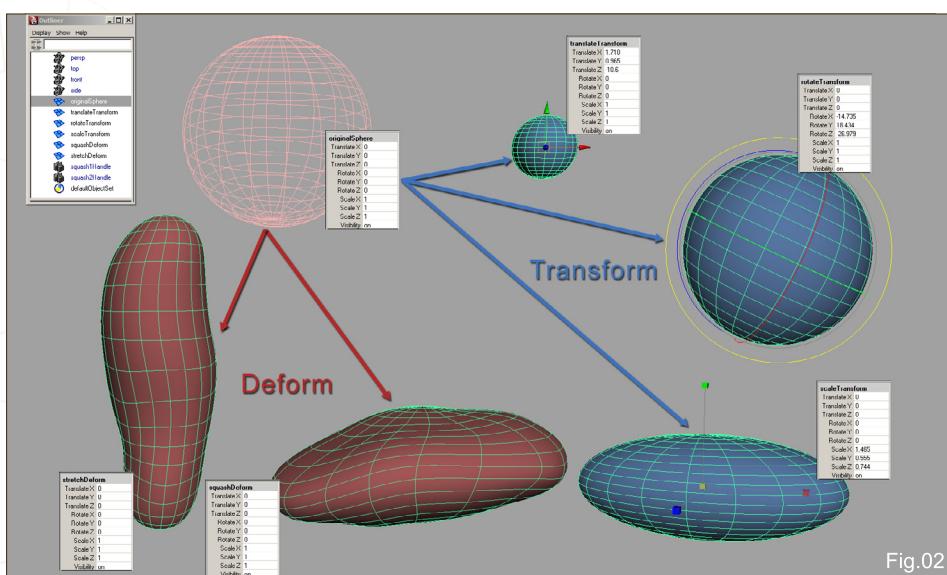
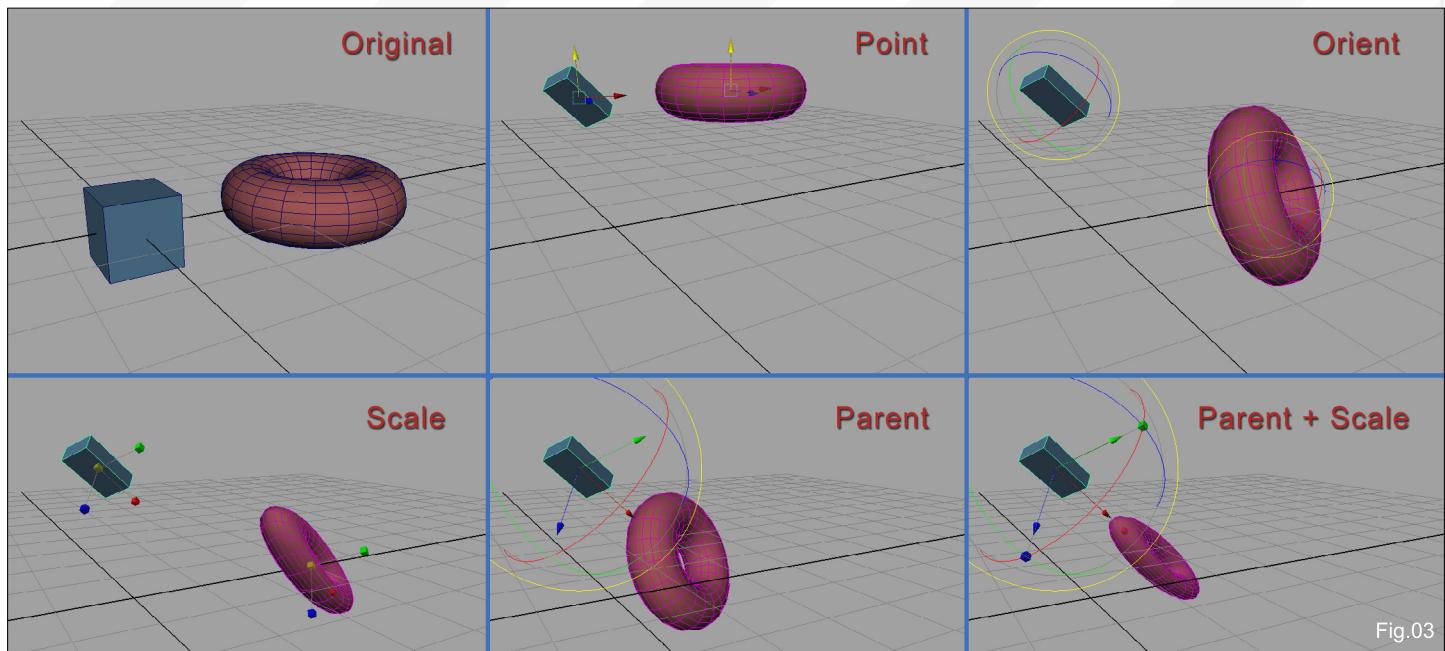


Fig.02



In a practical example, you would use transformation to move around an entire ball and deformation to squash and stretch the components of this ball.

CONSTRAINTS:

Sometimes in Maya we need to make an object follow another in translation, rotation, scale, for example making it always face the target, etc... These can be done using constraints. To create a constraint, first select the target object (the one who will lead), then select the constrained object (the one who will follow the lead) and click on the desired type of constraint from the menu (Animation >> Constrain). By default, constraints override your object's transform values to match the target values but you can also create an offset in your constraint by checking the Maintain Offset checkbox in any constraint option box.

* Point Constraint: constrains only the translation of the object using its own pivot point;

* Orient Constraint: constrains only the rotation of the object using its own pivot point;

* Parent Constraint: constrains only the translation and rotation of the object using the target's pivot point;

* Aim Constraint: constrains only the rotation of the object to make it always aim to the target's;

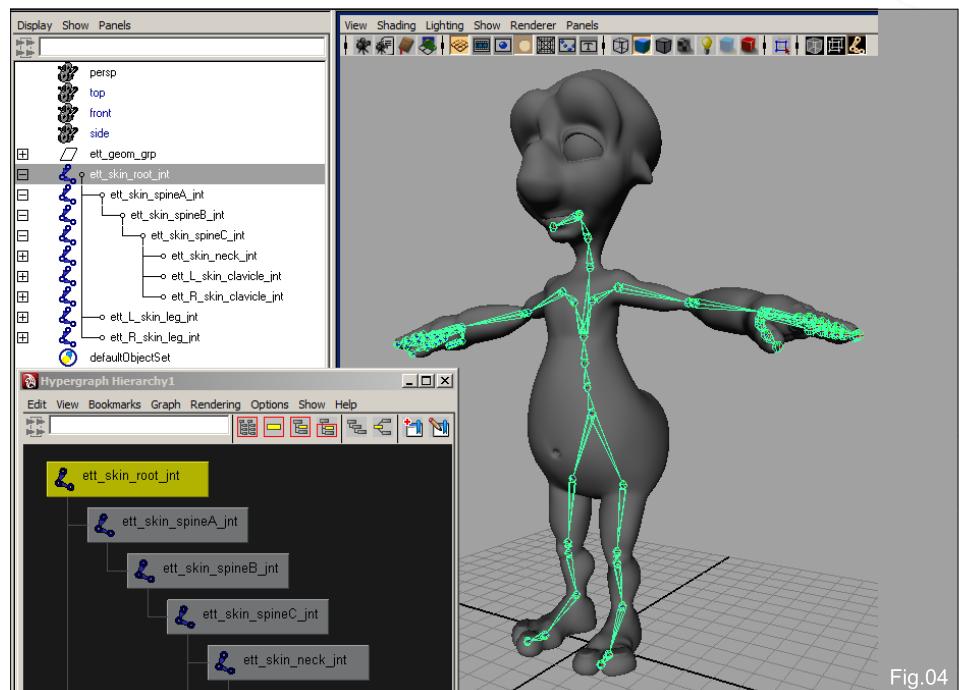
* Scale Constraint: constrains only the scaling of the object (Fig.03);

riggers! The main goal of working with joints is to put them on the right position of the character in order to get the best deformations when the joint is transformed... that is how joints work; they are used to drive components of meshes. Simply put, you move a joint and it moves components of a mesh that are bound to this joint. Do not worry if you do not understand, we will talk about skinning in a moment (Fig.04).

Tip: (Joints) = When creating a linear joint hierarchy using Joint Tool (Animation >>

JOINTS

Joints are hierarchical deformers that makes the skeletal structure for our models possible. They are very flexible and we can use them for lots of different characters, animals and creatures as we like. By far the most used object for us





Skeleton > Joint Tool) snap on the grid (pressing X), move joints in only one direction (using move manipulator option “Along rotation axis”) and rotate it to put in the desired angle. This way you create joint chains in only one axis and avoid future orientation problems (Fig.05).

SKINNING

Smooth Bind Skin (Animation > Skin > Bind Skin > Smooth Bind) is used to drive your geometry using joints. It creates a skin Cluster deformer in the input history of the geometry making it possible for our joints to be used as deformers of our character model (Fig.06).

We will take a look at the skinning process in detail in the next chapter.

DEFORMERS

There are a lot of deformers in Maya. Each deformer has an attribute named Envelope that

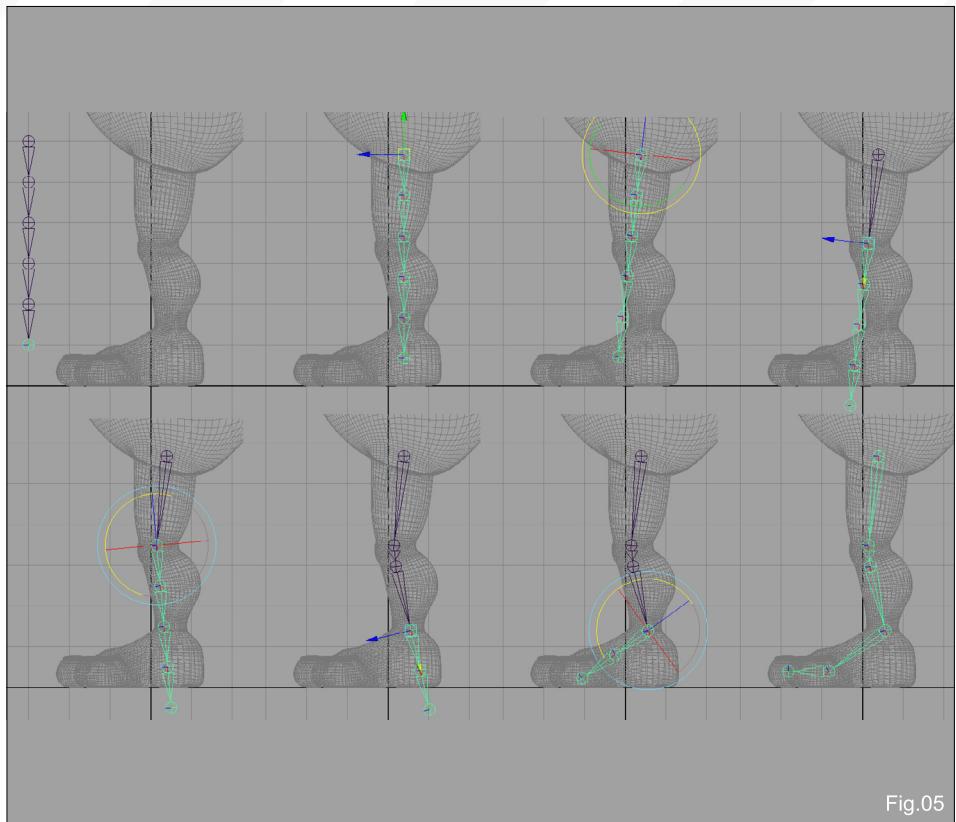


Fig.05

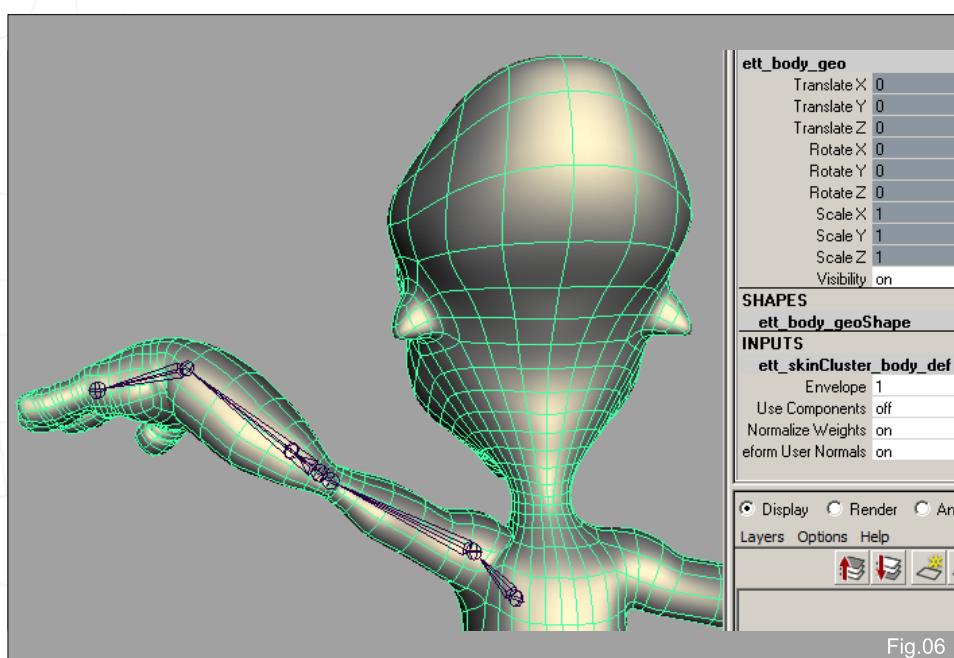


Fig.06

we can use to weigh the deformation applied. We will list some of the main ones that are used in rigging, but do not be satisfied with only these below, go ahead to try others too:

Cluster

It is a center point to modify geometries or selected vertices from a geometry. Create it by selecting a mesh or points of a mesh and going to (Animation > Create Deformers > Cluster), it will create a little “C” letter, our cluster Handle manipulator. This works almost the same as joints with the advantage of having a localized and easily adjustable effect. We can optimize this effect by painting its weight using (Animation > Edit Deformers > Paint Cluster Weights Tool) (Fig.07).

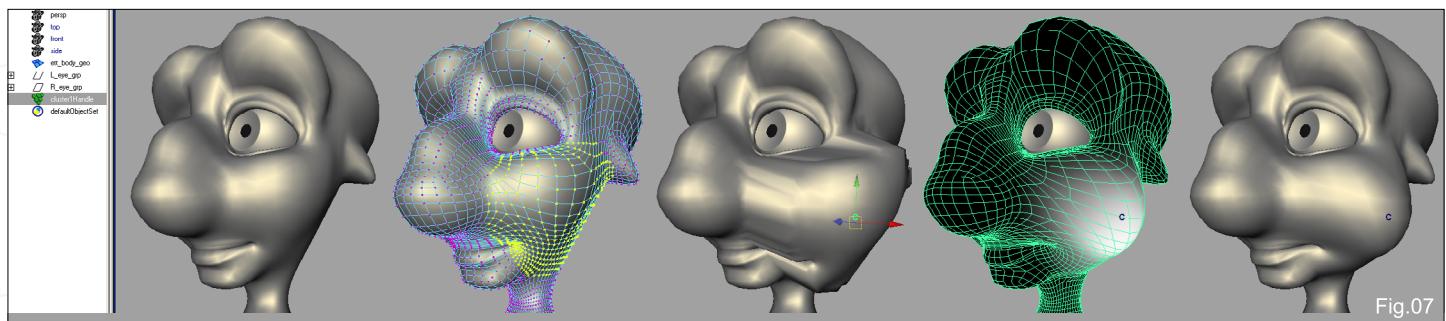


Fig.07

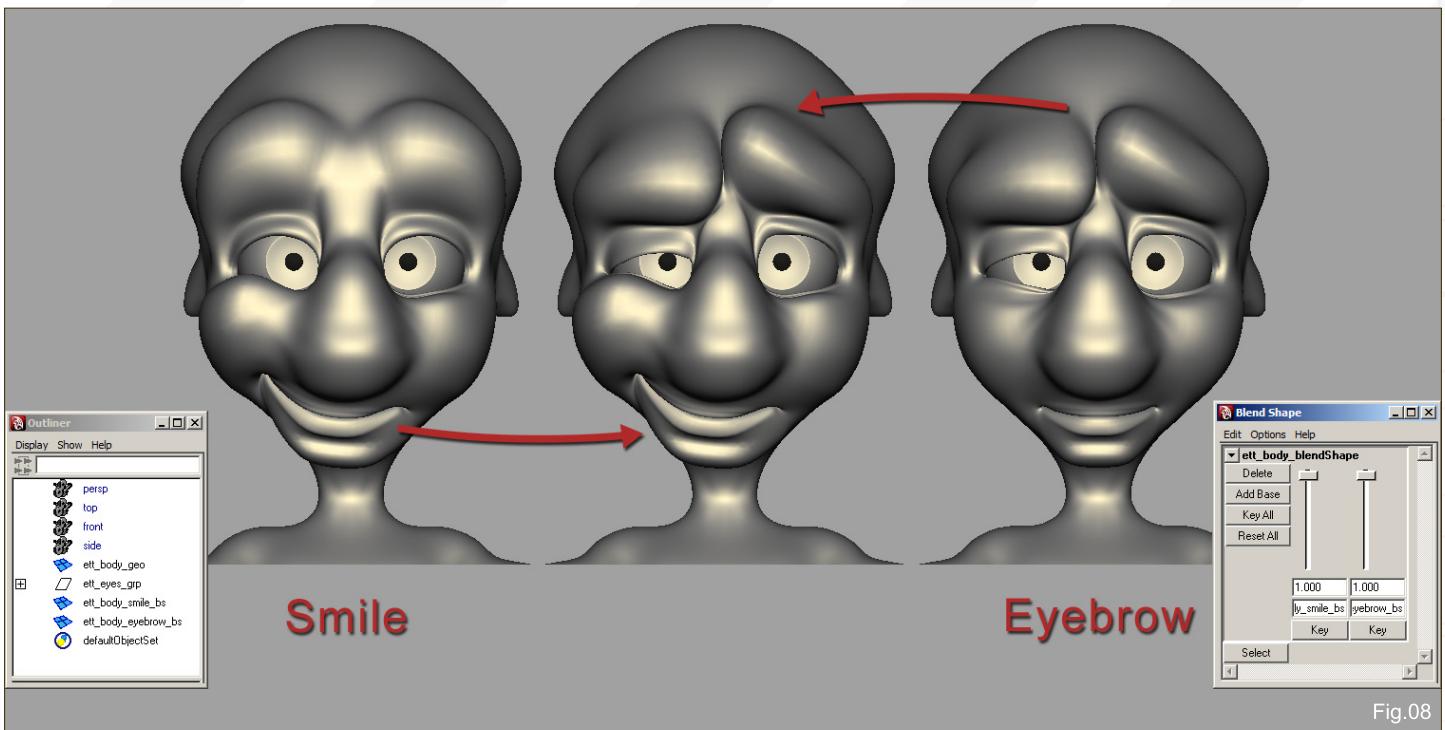


Fig.08

Blend Shapes

This allows us to model our own deformations anyway we want and toggle them as needed. We will see this topic in detail in chapter 5 (Fig.08).

Lattice

This deformer creates a box shape with points around geometries or selected points of geometries. Edit these points to deform the associated model. Create a lattice deformer by

selecting entire objects or components of them and going to (Animation >> Create Deformers > Lattice). Change the lattice S/T/U divisions for more resolution in X/Y/Z in order to get more precise deformations. The deformer also creates a lattice Base object (look at Outliner Panel) to define a starting location to calculate the deformations (Fig.09).

There are also the non-linear deformers. Why non-linear? Remember how all the deformers

we have seen until now work? They need a start and an end position to points and simply send them from one point to another, in a straight line. Non-linear deformers do not calculate the deformation this way. You'll notice each of them has a unique method of editing your meshes' points.

Main Nonlinear Deformers, very useful for cartoon rigging projects: Bend

+ The bend deformer literally bend's your

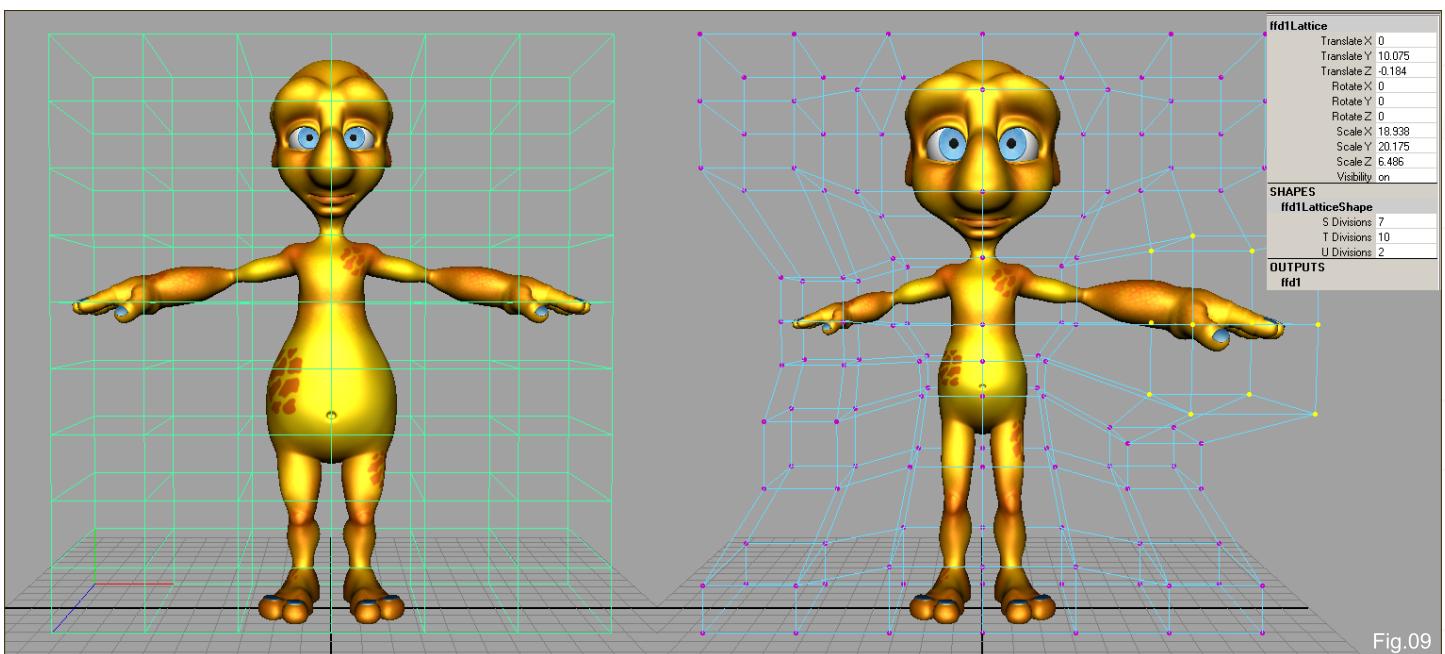


Fig.09

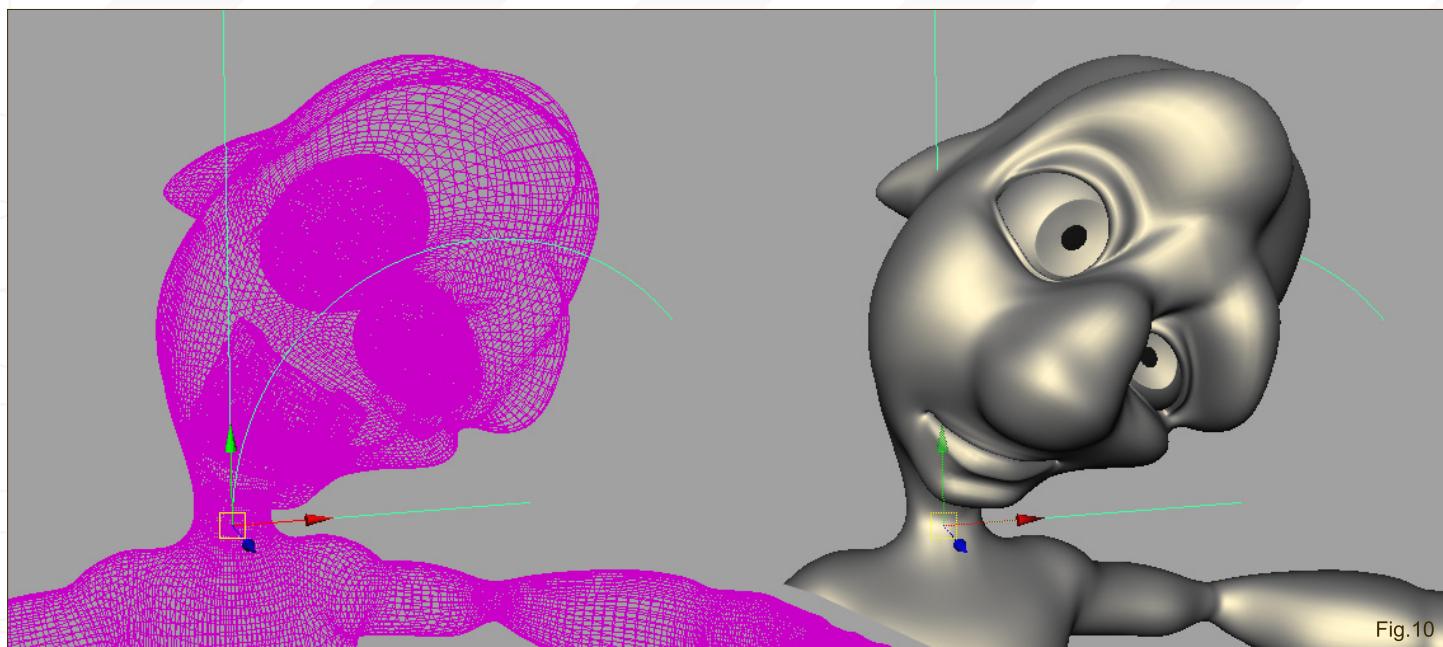


Fig.10

points in an arc. You can define its position and orientation by transforming the bend Handle manipulator. The Curvature attribute is used to measure the bending power and Low and High Bounds are used to change the boundaries of

the deformation. Create a bend deformer by selecting meshes or points of meshes and then clicking on (Animation >> Create Deformers > Nonlinear > Bend) (Fig.10).

Squash

+ The squash deformer will squash (or stretch) your geometry vertices while maintaining its volume. A squash Handle manipulator will be applied to selected meshes or points by going to (Animation >> Create Deformers > Nonlinear > Squash). You can move this handle around to the position where you get the best squash deformation for your needs. Edit its Factor attribute value in order to squash or stretch your geometry amongst other editable attributes (Fig.11).

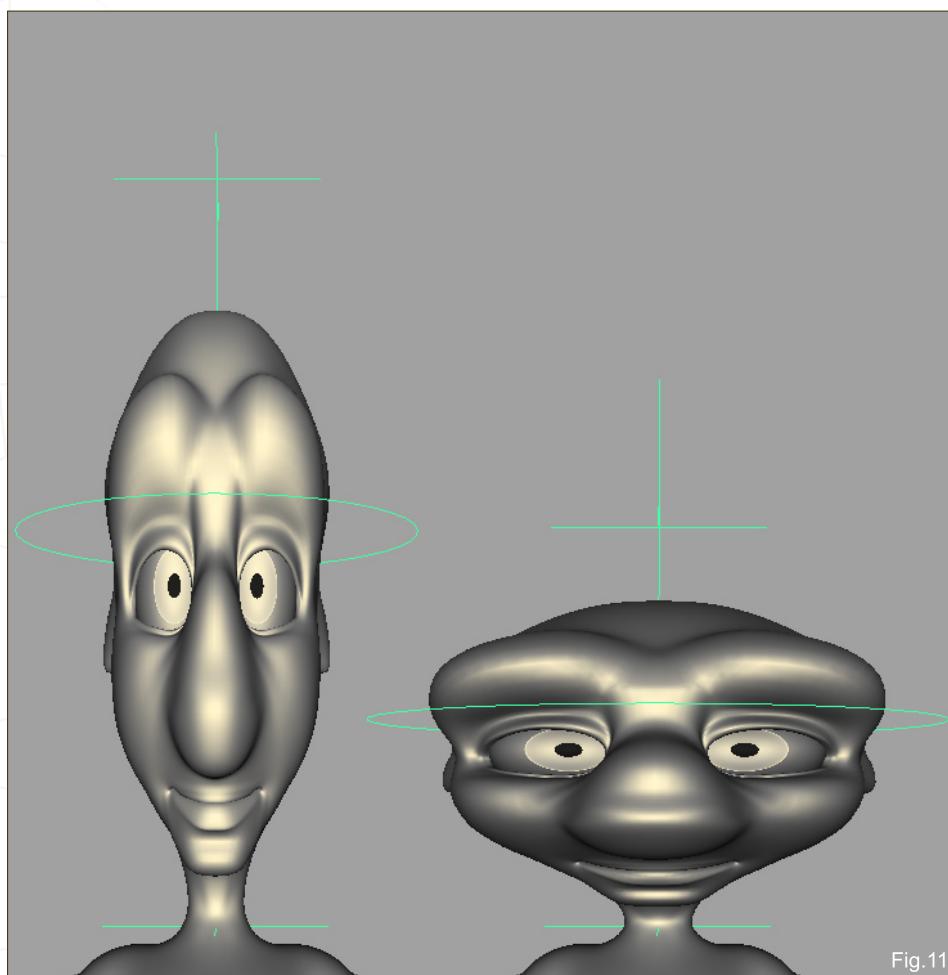


Fig.11

Now that you know some tricks, you are ready to get busy! In the next chapter we will start rigging our ET character by creating its skeleton hierarchy, go deeper into the skinning process and see a little more about blend shapes. Until then, practice a lot and get yourself comfortable with Maya!

**RICHARD KAZUO &
DANILO PINHEIRO**

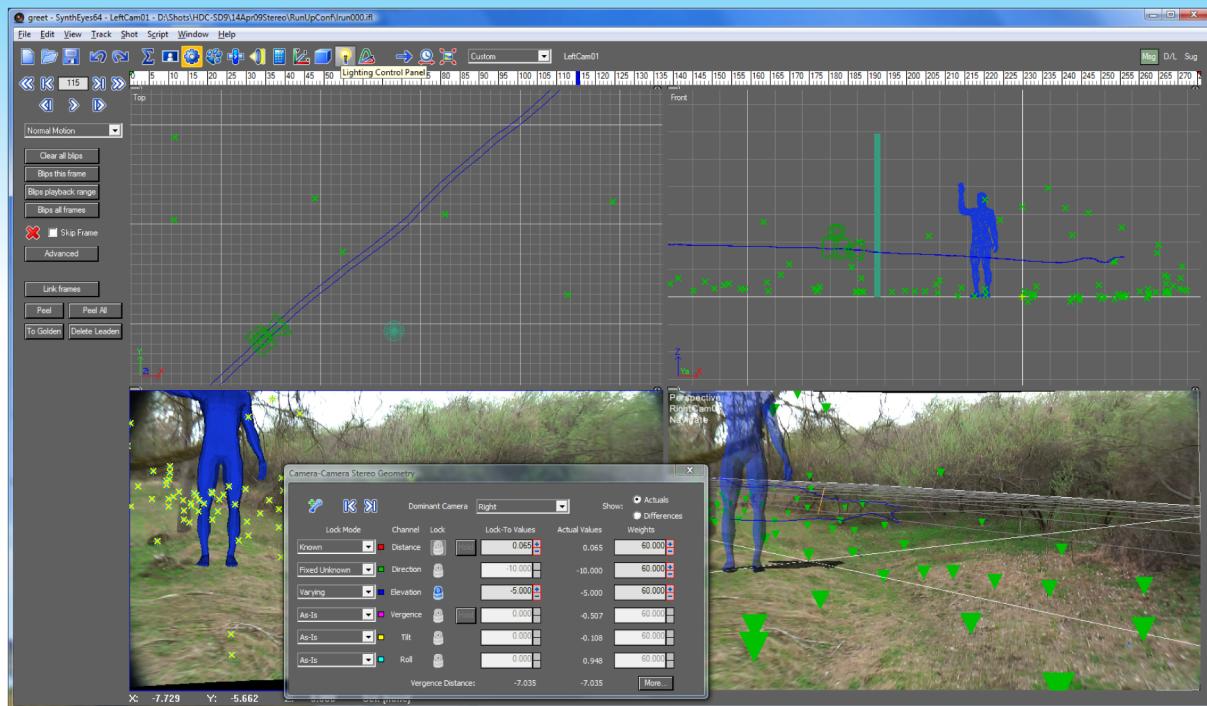
For more from these artists visit
<http://riggerman.animationblogspot.com/>
<http://nilouco.blogspot.com>
or contact
richardyo@gmail.com
nilouco@gmail.com



SynthEyes

Match-moving and Stabilization

Now with STEREOSCOPIC 3D support!



Available in both 32- and 64-bit versions for both PC & Mac starting at \$399

"Whatever happened to 'get a cup of coffee while the tracker is solving'?"

"Saved my life!"

"I just loaded a quick file into the demo I downloaded, I am blown away."

Typical Applications

Fixing Shaky Shots
Virtual Set Extensions
Animated Character Insertion
Product Placement in Post-Production
Face & Body Motion Capture
Talking Animals

"The software is amazing"

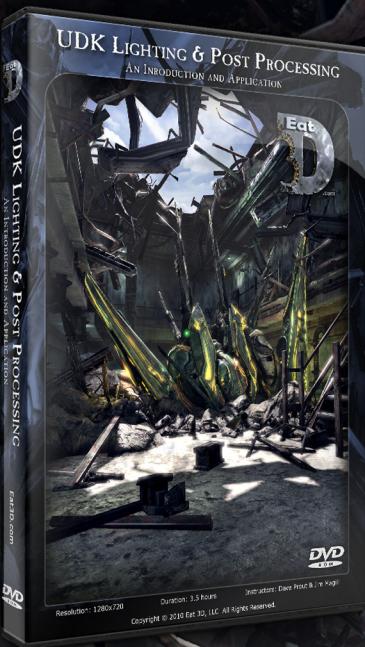
"You've got a great product at an incredible price."

ANDERSSON TECHNOLOGIES LLC

<http://www.ssontech.com>

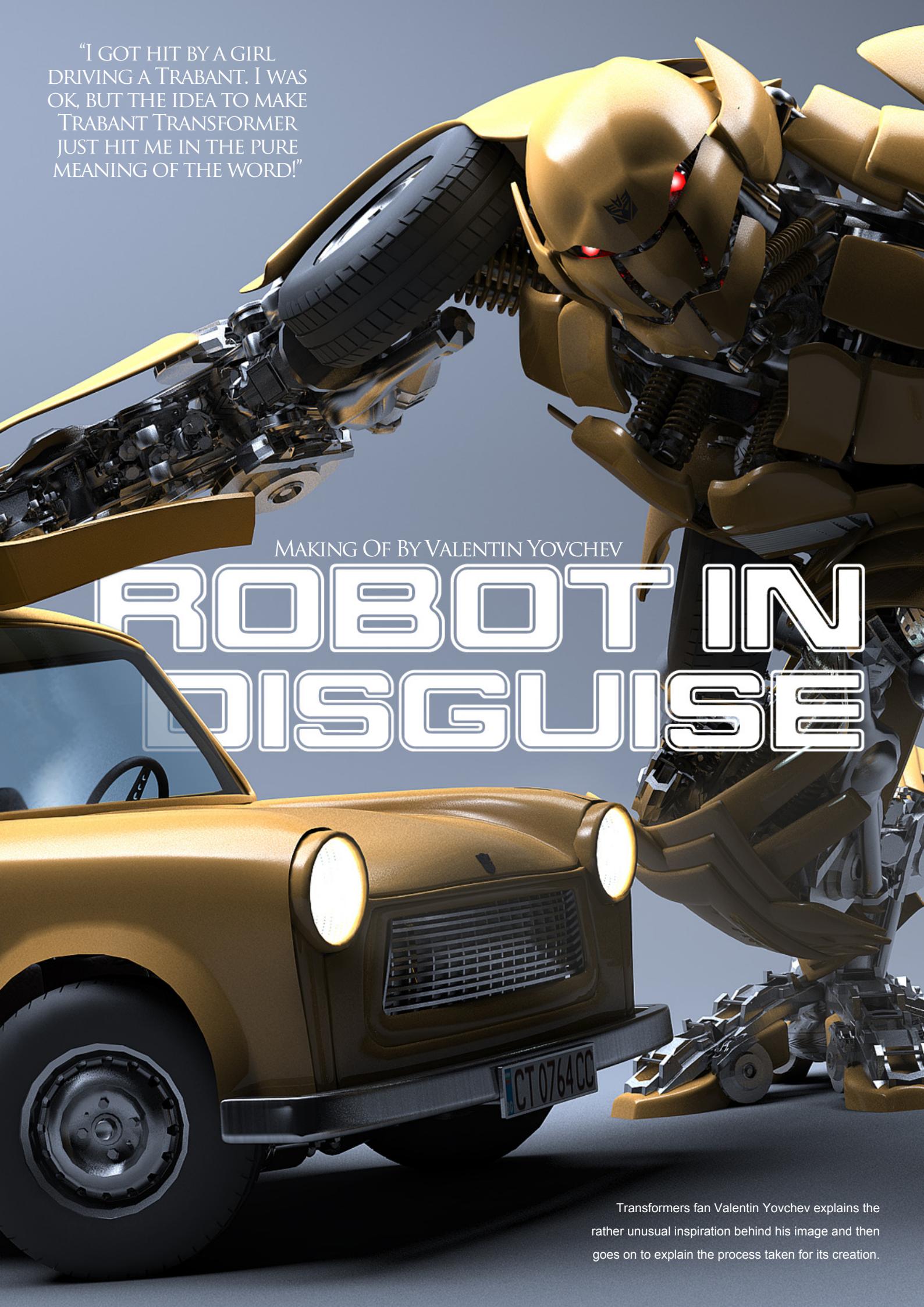
Sixth year in the market, serving artists in over 60 countries

New DVD Release



UDK Lighting & Post Processing

Dave Prout & Jim Magill

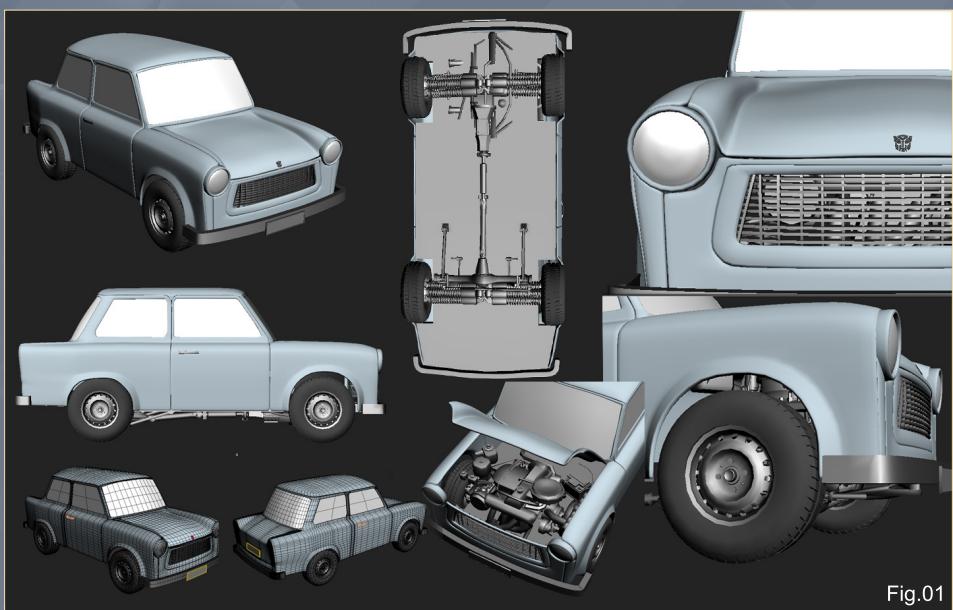


"I GOT HIT BY A GIRL
DRIVING A TRABANT. I WAS
OK, BUT THE IDEA TO MAKE
TRABANT TRANSFORMER
JUST HIT ME IN THE PURE
MEANING OF THE WORD!"

MAKING OF BY VALENTIN YOVCHEV

ROBOT IN DISGUISE

Transformers fan Valentin Yovchev explains the rather unusual inspiration behind his image and then goes on to explain the process taken for its creation.



ROBOT IN DISGUISE

Software Used: 3ds Max

SECTION TITLE

Like any other piece even this has a background and a little bit of story to it. When I started to think what I want to make, I was very excited by the transformers movies. I'm a big fan of the animation series and the movies, and

there were so many awesome robot designs that were really cool, but no-where was featuring really cool old types of Russian or German cars, and that disappointed me.

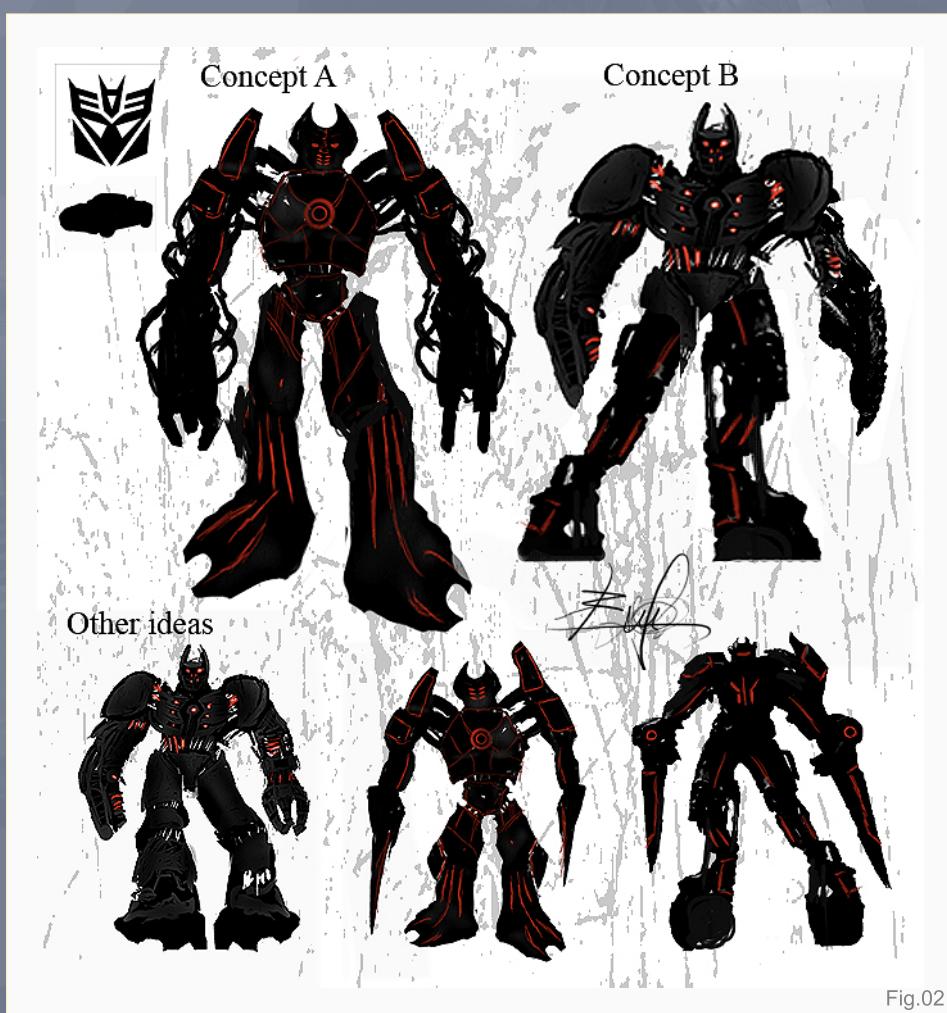
Well let's not blame Michael Bay for that! Since

there were so many robot designs over the internet, I wanted to come up with an idea for a robot transformer that was powerful and angry looking but based on an old car. I started to come up with designs but nothing fit the idea I had in my head, and then whilst I was walking to a date one night I got hit by a girl driving a Trabant. I was ok, but the idea to make Trabant Transformer just HIT me in the pure meaning of the word!

When I got back home I started to collect Trabant references from all over the net. **(Autobot)**

Firstly I started to model the Trabant. When I create a robot I want to have the base ready so I can go nuts if you get what I mean, when I start to move things around on the robot. This is how my Trabant model looks after the modeling stage. I tried to put as much detail as possible in the model. **(Fig.01)**

After the modeling stage I looked at my concept and started to move onto the robot. First of all I set a biped in the scene. I wanted to have all the correct proportions and joints. After putting the biped in my scene I looked at a few of my sketches that I had drawn. I drew my designs like black silhouettes and chose one for my robot. **(Fig.02)**



Then I started to build the base skeleton of the robot using the biped that I put in the scene earlier. I started setting up the parts in groups and thinking how to connect the different parts of the robot using the car, the car engine, the wheels and anything else that is interesting, and I did this until I was happy. (Fig.03)

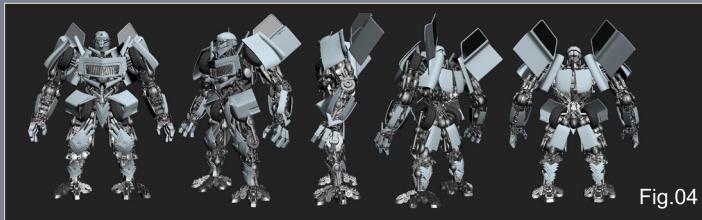


Fig.04

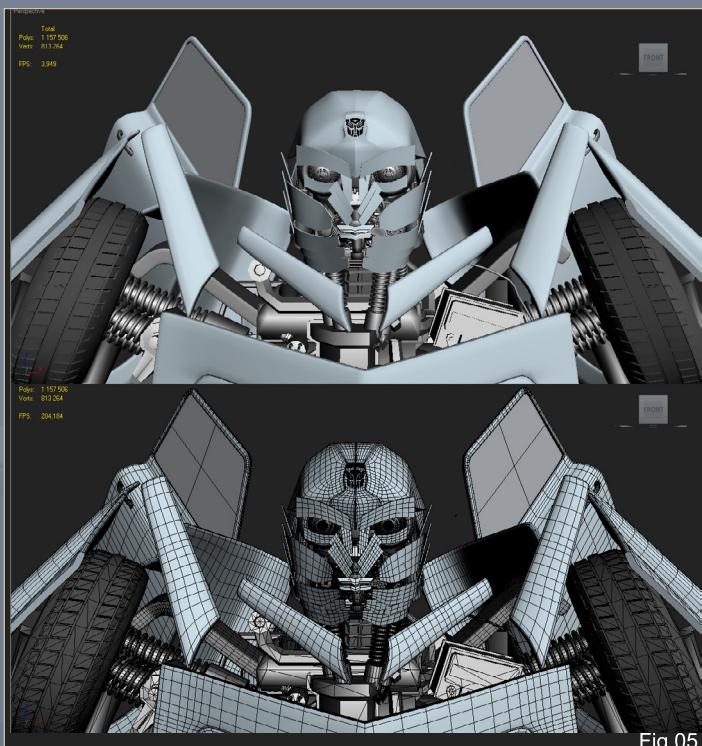


Fig.05

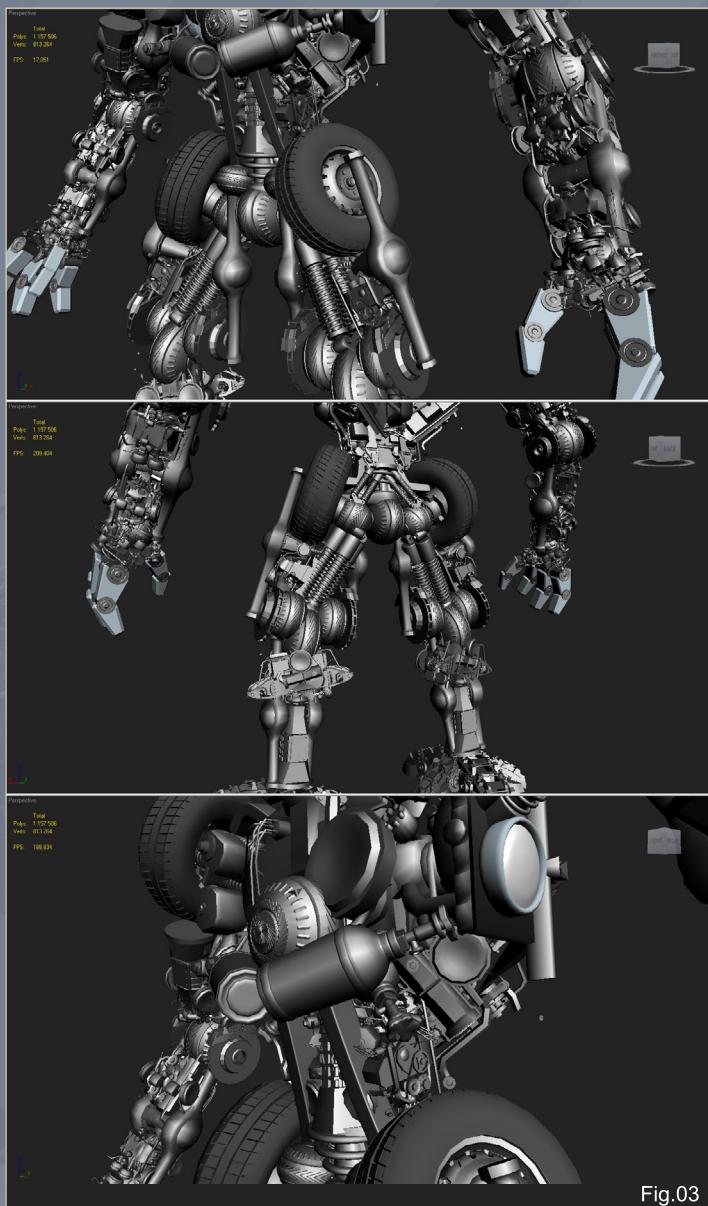


Fig.03

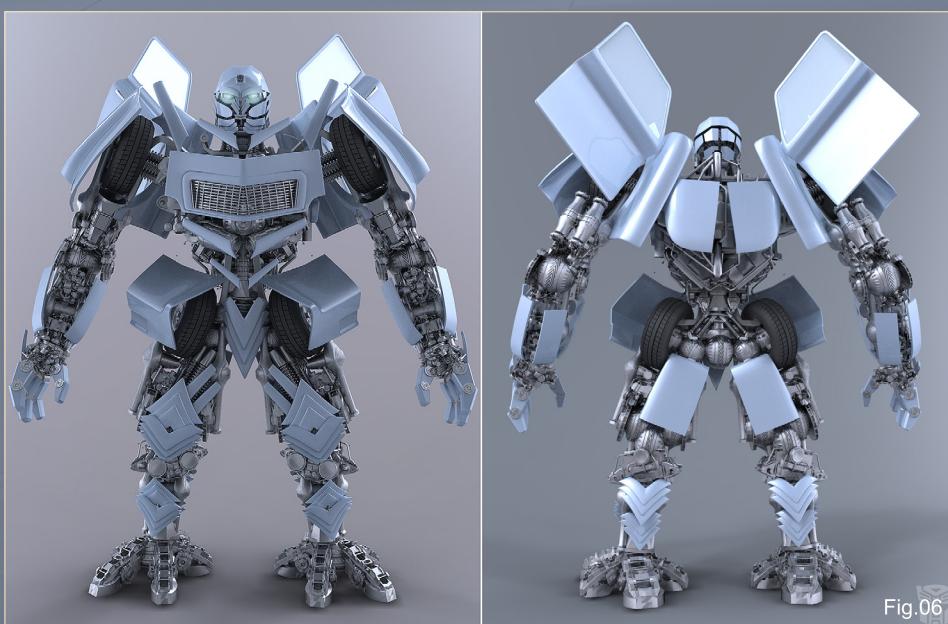


Fig.06

After that stage I continued with the robot using parts from the Trabant. I started to cut to scale and to edit some parts to fit the type of design I wanted. Some of the elements were re-modeled to fit my needs for the robot design and that's how I come up with this: (Fig.04 – 06)

All I did after that was to join the parts to the biped, because it looked the way I wanted it to. (Fig.07)

I was happy to come up with different ideas for the robot whilst I was modeling, so I was posting W.I.P images in a Bulgarian 3d forum, where my friends commented and critiqued the process. Then one of them came up with an idea that



set the foundations for the Decepticon version.
(Decepticon)

He saw the final artwork and did a quick paint over in Photoshop to make the robot look mean. When I saw the concept I just fell in love with it. (Fig.08)

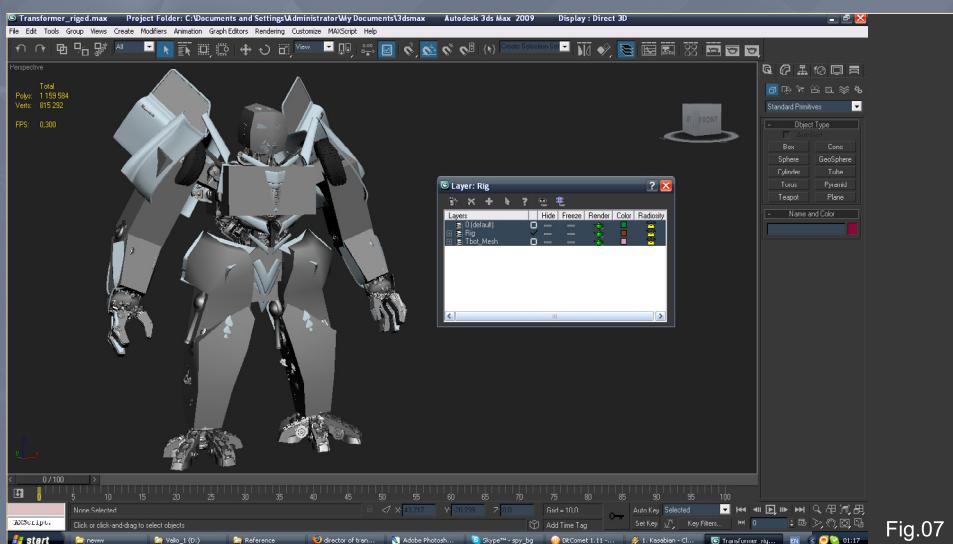


Fig.07

The quick paint over was done by Tsvetomir Georgiev (<http://ceco.cgsociety.org/>) thank you for this my Friend if you are reading this :)

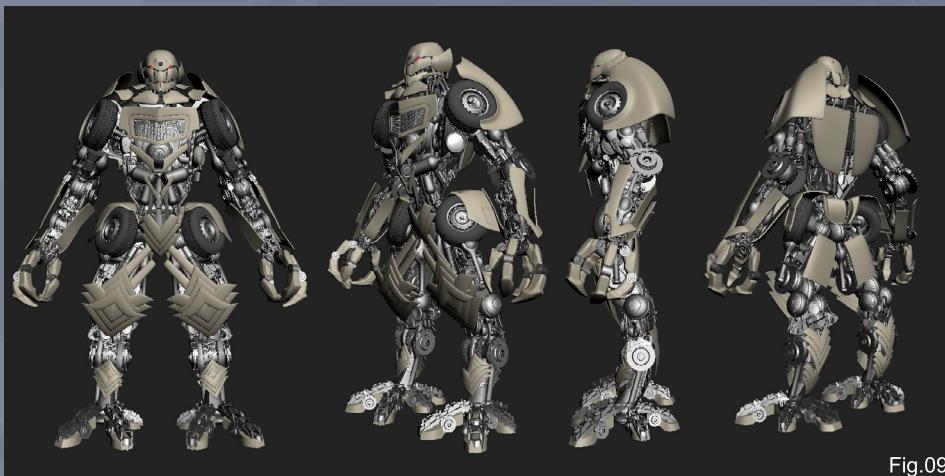


Fig.09



Fig.08

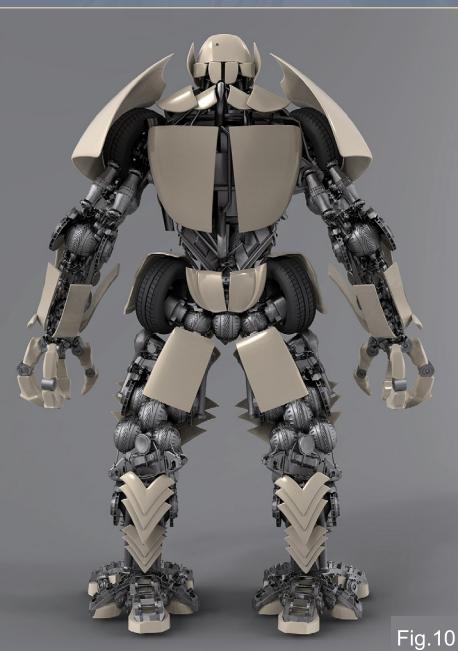


Fig.10

The next stage was to change to this concept, so firstly I edited the biped and then set up the pieces to fit the new concept. Then I started to try to edit and re-create the mean look of the robot. This is what I come up with. (Fig.09 – 10)

Then like the first model he was rigged, and I made a test render and a quick paint over in the back ground to see how it would feel in the environment. (Fig.11)

The next step was to make the robot look powerful, so I looked at different pictures from the transformers movie and tried to come up with a cool and original idea. I studied photography for 2-3 years, so I tried to capture



Fig.11

the perfect angle, and from it to move and set up the pose of the robot and everything else in the scene.

The scene setup I created was really simple, there is nothing fancy about it, also the materials and the lights are really simple as well. (Fig.12) Since I was using Mental Ray to render the picture I used simple Photometric Light for the top light, and 2 spot lights for the Trabant. For the car paint I used simple Arch & Design material and metal preset for the skeleton of the Trabant and the robot. I added car seats in the car and a steering wheel to make the picture more visually interesting, since I didn't need them in the beginning. Once the car was in the scene I could see that these were needed.

Many of you asked on the forums why the car paint is so simple. The answer is quite simple. If any of you have ever seen a Trabant it's a kind of plastic/paper looking car. It's an old german car which is little and cute, that's why making it look like an evil robot was my goal. Once I had set up my 3 cameras I viewed all them and choose a final image for rendering. (Fig.13)

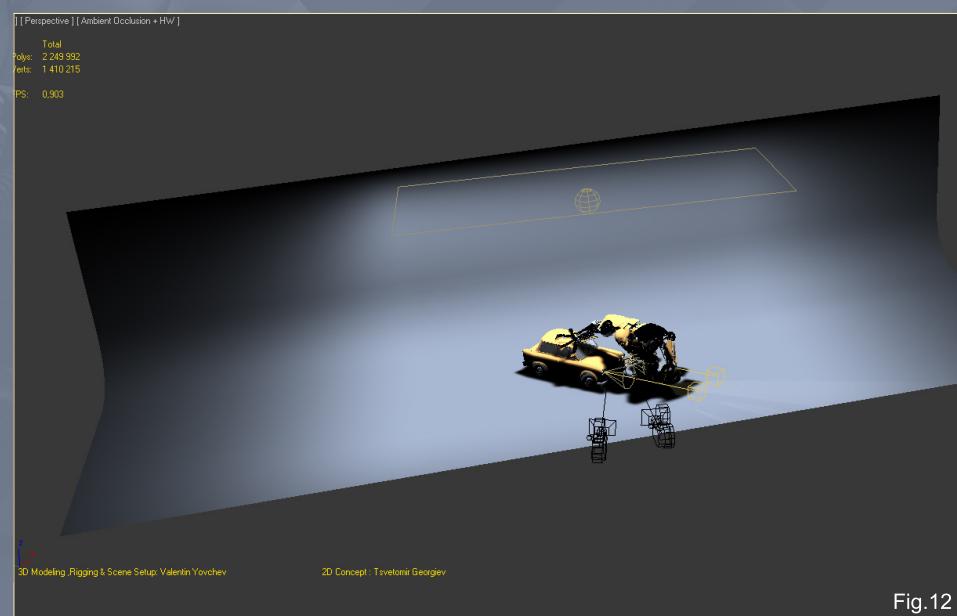


Fig.12

For the render settings all I did was to change the final gather to medium and to set my sample rate to Mitchell and the sample rate to 1/16, nothing to fancy.

And here is the final Render: (Fig.14)

I didn't adjust it much in Photoshop, I usually go crazy with my post production but I wanted to show the cool quality of mental ray, even without

any major post production. Sometimes the simple things are most beautiful. All I added was a little sharpness to the image in Photoshop.

I hope you've enjoyed this making of

VALENTIN YOVCHEV

For more from this artist please contact them:
spybg@abv.bg

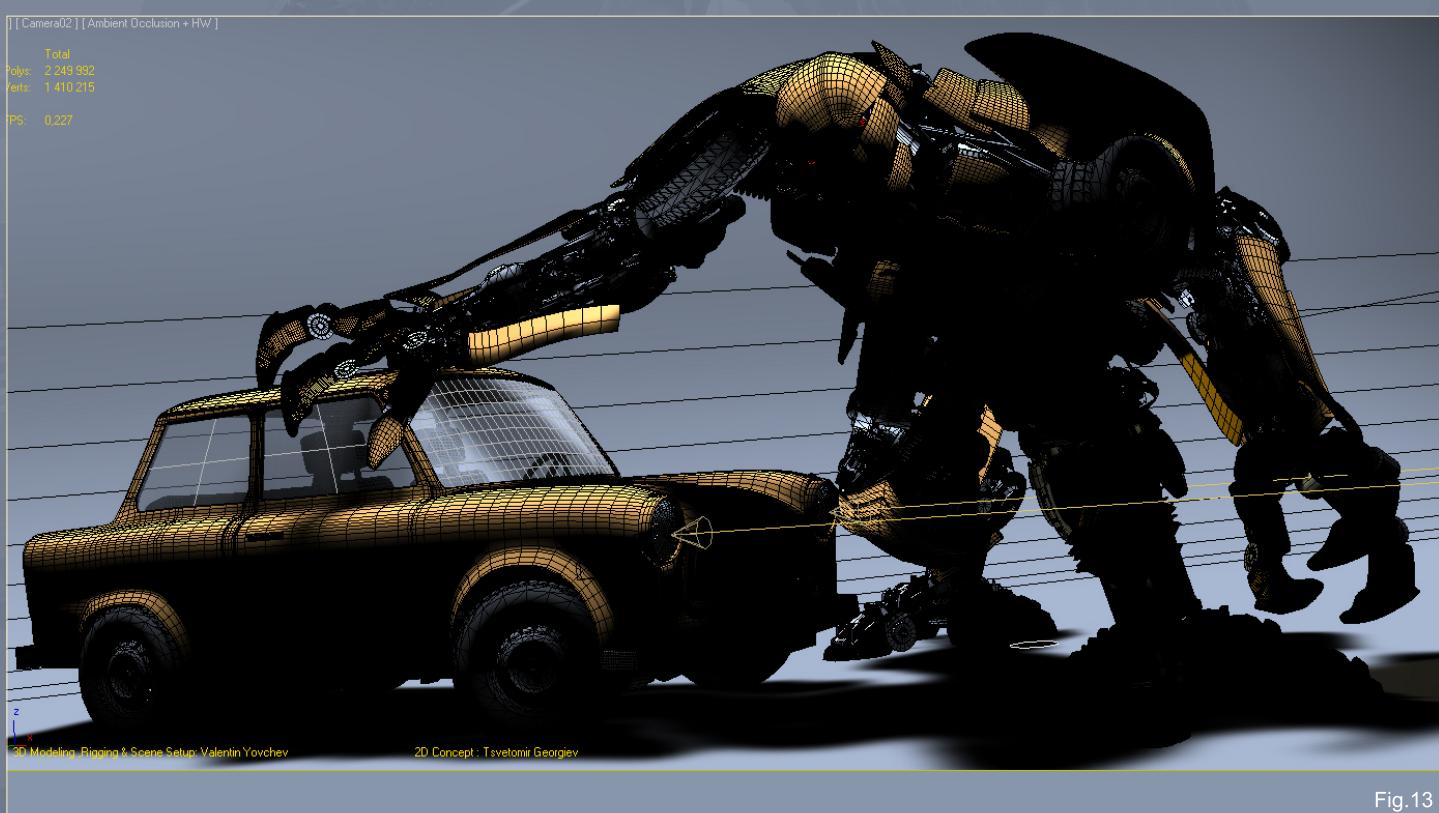


Fig.13



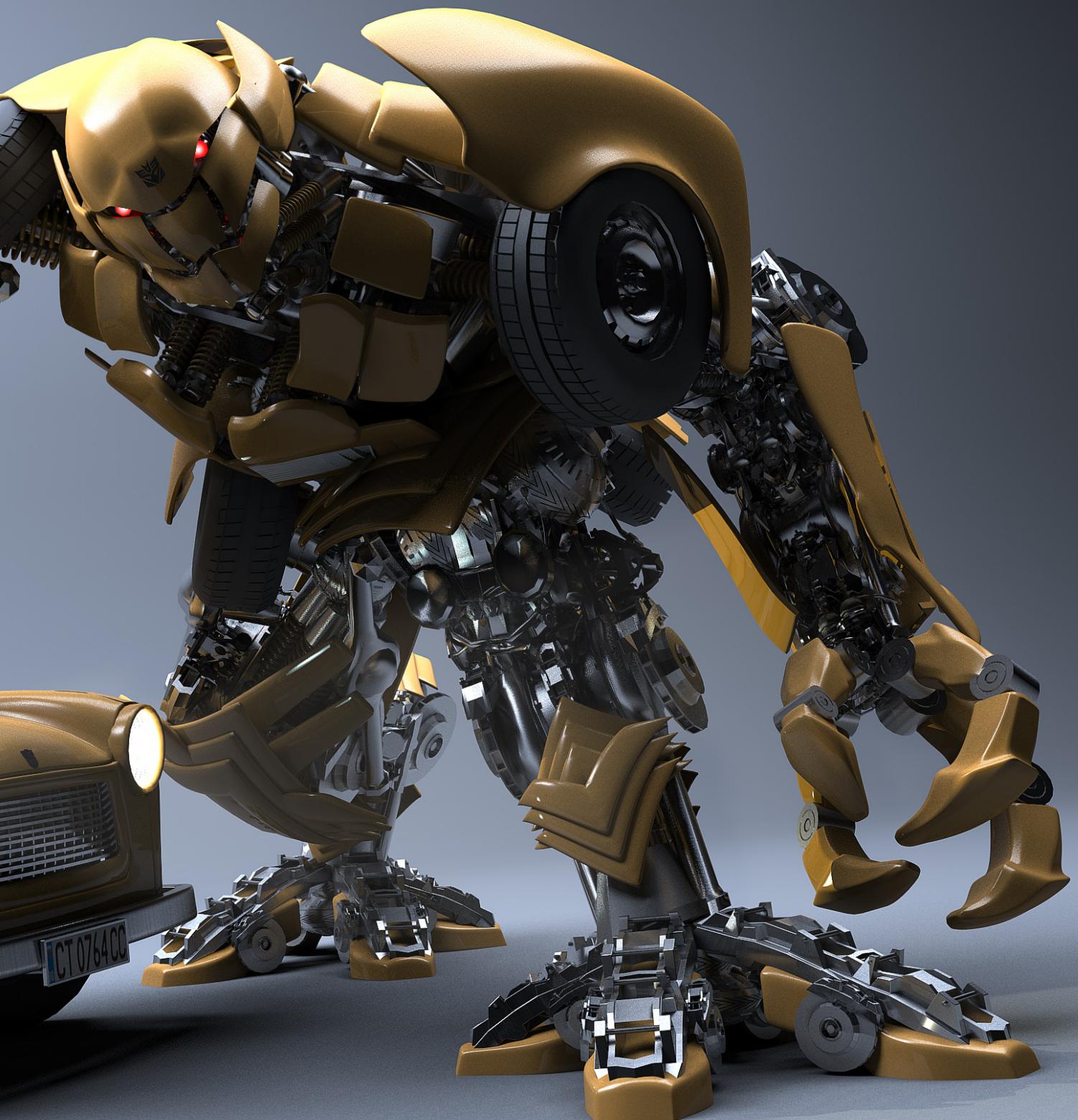


Fig.14

**3DTotal presents the new issue of *2DARTIST*
magazine: a downloadable monthly magazine for
concept art, digital & matte painting for only £2.75 (approx \$3.78 - €2.93)**



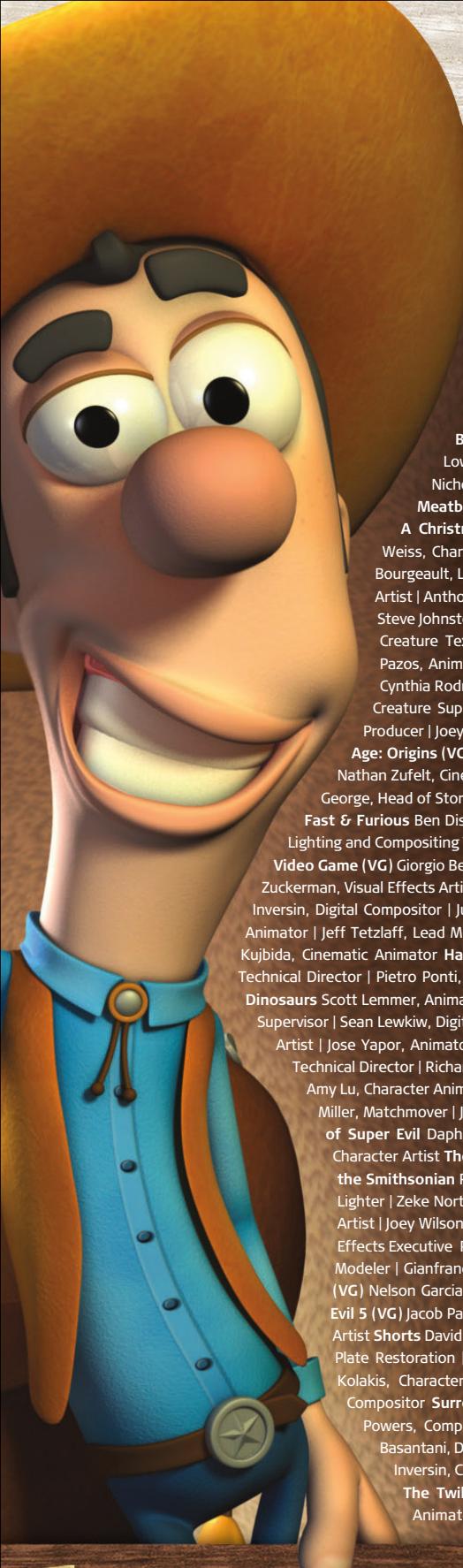
visit WWW.2DARTISTMAG.COM to download the free 'lite' issue, the full issue, subscription offers and to purchase back issues.



OUR ALUMNI MAKE AN IMPACT.

VFS ANIMATION & VISUAL EFFECTS ALUMNI CREDITS INCLUDE

9 Mike Dharney, Animator 2012 Jamie Bowers, Technical Director 2012 Matt Koenig, Lead Compositor 2012 Zeke Norton, Previsualization Supervisor | Anuj Patil, Senior Technical Director | Christine Peterson, Digital Compositor **50 Cent: Blood on the Sand (VG)** Giorgio Bertolone, Creature Technical Director **Aliens in the Attic** Rex Ahn, Pre-Visualization Lead | Craig Calvert, CG Supervisor | Julianna Kolakis, Character Designer | Ben Sanders, Supervising Animator | Rommel Shamoun, Compositor | Noel Wright, Digital Compositor | Adam Yaniv, Animation Supervisor **Alvin & the Chipmunks: The Squeakuel** Nicholas Augello, Technical Animator | Christopher Downs, Technical Animator | Amy Lu, Animator | Adam Yaniv, Animation Supervisor **Amelia** Armando Velazquez, Digital Compositor | Clement Yip, Animator **America's Army 3 (VG)** Matthew Turner, Artist **Angels & Demons** Craig Calvert, Pre-Visualization Artist | Jessica Wan, Lead Rotoscope Artist | Noel Wright, Digital Compositor **Armored** Riley Benard, Digital Compositor | Yuta Shimizu, Visual Effects Artist **Astro Boy** Andreas Hikel, Layout Artist Kim Ooi, Animation Director **Avatar** Michael Cozens, Lead Animator | Tamir Diab, Technical Director | Aaron Gilman, Character Animator | Alfredo Lizardo, Layout Technical Director | Ben Sanders, Animator **The Beatles: Rock Band (VG)** Mike Krentz, UI Artist **Brütal Legend (VG)** Marke Pedersen, Senior Artist **Case 39** Riley Benard, Digital Compositor | Craig Calvert, CG Supervisor | Matthias Lowry, Visual Effects | Fion Mok, Matchmove Artist | Teh-wei Yeh, Matchmove Artist **Cirque du Freak: The Vampire's Assistant** Nicholas Augello, Technical Animator | Julianna Kolakis, Character Designer | Ai Saimoto, Lighting Lead **Cloudy with a Chance of Meatballs** Andrew Lawson, Animator | Arun Ram-Mohan, Senior Color and Lighting Technical Director **Coraline** Brian Demoskoff, Animator **A Christmas Carol** Kirk Chantraine, Motion Capture Technical Director | Joel Pennington, Motion Capture Technical Director | Shraga Weiss, Character Modeler | Brent Wong, Character Modeler **District 9** Neill Blomkamp, Director/Co-Writer | Jelmer Boskma, Modeler | Robert Bourgeault, Lighting Lead | Freddy Chavez, Visual Effects Compositor | Dominic Cheung, Lighting Technical Director | Paul Copeland, Visual Effects Artist | Anthony Di Ninno, Animator | Brian Harder, Creature Rigger | Bernhard Huber, Effects Animator | Brett Ineson, Motion Capture Supervisor Steve Johnston, Render Wrangler | Patrick Kalyn, Animator | Bernhard Kimbacher, Visual Effects Data Coordinator/Compositor | Julianna Kolakis, Creature Texture Painter | Adam Marisett, Visual Effects Artist | Nikolai Michaleski, Compositor | Brendon Morfitt, Digital Artist | Fernando Pazos, Animator | Dan Prentice, Visual Effects Artist | Mike Rhone, Visual Effects Artist | Cesar Rodriguez Bautista, Digital Paint & Roto Artist Cynthia Rodriguez del Castillo, Digital Paint & Roto Artist | Marc Roth, Visual Effects Artist | Derek Stevenson, Matchmove Lead | James Stewart, Creature Supervisor | Richard Sur, Lighting Technical Director | Anna Tonrungroj, Digital Compositor | Shawn Walsh, Visual Effects Executive Producer | Joey Wilson, Modeler/Texturer | Samson Wong, Matchmove Artist **Drag Me To Hell** Thomas Schelesny, Visual Effects Supervisor **Dragon Age: Origins (VG)** Bobby Bath, Character/Creature Artist | Ryan Lim, Lead Creature Character Artist | Herbert Lewis, Artist | Brian Sum, Concept Artist Nathan Zufelt, Cinematic Animator **Escape from Planet Earth** Giorgio Bertolone, Creature Technical Director | Anthony Di Ninno, Layout Artist | Craig George, Head of Story | Gary Hendry, Layout Artist | Nicholas Smolyn, Layout Artist **Eureka** Anuj Patil, Lead Compositor | Mike Rhone, Visual Effects Artist **Fast & Furious** Ben Dishart, Texture Artist | Armando Velazquez, Digital Compositor **The Final Destination** David Yabu, Animator **G-Force** John Iskandar, Lighting and Compositing TD | Ken Kaiser, Animator | Hyun Chul Jung, Animator | Andrew Lawson, Animator | Phan Wiantrakoon, Animator **Ghostbusters: The Video Game (VG)** Giorgio Bertolone, Creature Technical Director | Winston Fan, Compositor | Harry Liu, Junior Motion Capture Editor | Jessica Mih, Modeler | Maya Zuckerman, Visual Effects Artist **G.I. Joe: The Rise of Cobra** Jelmer Boskma, Modeler | Patrick Conaty, Digital Compositor | Ben Dishart, Texture Supervisor | Aruna Inversin, Digital Compositor | Julianna Kolakis, Concept Artist/Modeler | Sean Lewkiw, Visual Effects Artist | Tom Piedmont, Digital Artist | Jeremy Stewart, Senior Animator | Jeff Tetzlaff, Lead Modeler | Jessica Wan, Lead Rotoscope Artist **Grey Gardens** Armando Velazquez, Digital Compositor **Halo 3: ODST (VG)** Bartek Kujbida, Cinematic Animator **Harper's Island** Steve J. McLeod, Digital Compositor **Harry Potter and the Half-Blood Prince** Harry Mukhopadhyay, Lead Effects Technical Director | Pietro Ponti, TD Generalist | Gia Sadhwani, Digital Effects Artist | Kieran Tether, Digital Artist | Teh-wei Yeh, Lighting TD **Ice Age: Dawn of the Dinosaurs** Scott Lemmer, Animator | Thom Roberts, Animator | Brent Wong, Modeler **Invictus** Christopher Ahrens, Lighting Lead | Geoffrey Hancock, Visual Effects Supervisor | Sean Lewkiw, Digital Effects Supervisor | Jason McKeeman, Lead Technical Animator | Farhad Mohasseb, Compositor | Michelle Skrzyniarz, Matchmove Artist | Jose Yapor, Animator **Killzone 2 (VG)** Andrea Arghinteni, Technical Artist **King of the Hill** Michael Loya, Director **Knowing** Tim Rowlandson, Rigging Technical Director | Richard Sur, Lighting Technical Director **Land of the Lost** Nicholas Augello, Massive Technical Director | Tony Etienne, Lighting Supervisor Amy Lu, Character Animator **Law Abiding Citizen** Freddy Chavez, Compositor | Veronica Marino, Compositor | James McPhail, Effects Animator | Jacob Curtis Miller, Matchmover | Jay Randall, Visual Effects Supervisor | Derek Stevenson, Matchmover | Shawn Walsh, Visual Effects Executive Producer **The League of Super Evil** Daphne De Jesus, Compositor | Barry Karnowski, Animation Supervisor **The Lord of the Rings: Conquest (VG)** Michelle Lam, Lead Character Artist **The Lovely Bones** Michael Cozens, Previs Animator **Monsters vs. Aliens** Jiyoung Lee, Texture Artist **Night at the Museum: Battle of the Smithsonian** Rex Ahn, Previsualization Lead | Nicholas Augello, Technical Animator | Christopher Downs, Technical Animator | Joshua Herrig, Lead Lighter | Zeke Norton, Previsualization Supervisor | Ai Saimoto, Lighting Lead | Ben Sanders, Supervising Animator | Derek Stevenson, Previsualization Artist | Joey Wilson, Previsualization Artist | Adam Yaniv, Animation Supervisor **Orphan** Francisco Moncayo Moreno, Digital Artist | Shawn Walsh, Visual Effects Executive Producer **Paul Blart: Mall Cop** Riley Benard, Digital Compositor **Planet 51** Sandro di Segni, Senior Effects TD | Jorge Kirschner Torres, Modeler | Gianfranco Valle, Effects Animator **Prototype (VG)** Harry Ahn, Lead Cinematics Animator | Bobby Bath, Lead Character Artist **Punch-Out!! (VG)** Nelson Garcia, Concept Artist **Pushing Daisies** Scott Dewis, Visual Effects Red **Fact: Guerrilla (VG)** Dilber Mann, Project Manager **Resident Evil 5 (VG)** Jacob Palmer, Animator **Rock Band Unplugged (VG)** Mike Krentz, Artist **Sanctuary** Julie Bergman, Animator | Mladen Miholjcic, Visual Effects Artist **Shorts** David Yabu, Animator **Sorority Row** Mike Rhone, Visual Effects Artist **Star Trek** Aruna Inversin, Digital Compositor | Tom Piedmont, Digital Plate Restoration | Kieran Tether, Digital Artist | Teh-wei Yeh, Digital Artist **Stargate Universe** Daphne De Jesus, Digital Compositor | Julianna Kolakis, Character Designer | Daniel Osaki, Lead 3D Modeler | Anna Tonrungroj, Digital Compositor **Supernatural**, Daphne De Jesus, Digital Compositor **Surrogates** Anthony Di Ninno, Animator | Joshua Herrig, Lighting Artist/Look Dev Artist | Matthias Lowry, Digital Compositor | Laurie Powers, Compositor | Teh-wei Yeh, Digital Artist **Tales of Monkey Island (VG)** Jason Findley, Character Artist **Terminator Salvation** Geeta Basantani, Digital Matte Painter | Teh-wei Yeh, Lighting Technical Director **Transformers: Revenge of the Fallen** Allen Holbrook, Animator | Aruna Inversin, Compositor | Stephen King, Animator | Henri Tan, Creature Technical Director | Kieran Tether, Digital Artist | Teh-wei Yeh, Digital Artist **The Twilight Saga: New Moon** Dominic Cheung, Lighting Technical Director **Uncharted 2: Among Thieves (VG)** Mike Yosh, Lead Animator **Underworld: Rise of the Lycans** Pearl Hsu, 3D Artist | Lon Molnar, Visual Effects Production Executive **Up** Bill Watral,



3D ANIMATION & VISUAL EFFECTS | CLASSICAL ANIMATION | DIGITAL CHARACTER ANIMATION
Vancouver Film School. vfs.com/animationvfx



Visual Effects Artist **Warhammer 40,000: Dawn of War II (VG)** Ian Cumming, Senior Artist | Allan Dilks, Artist | Nathan Hocken, Lead Animator | Christine Hubbard, Artist | Claire Roberts, Artist | Jefferson Takahashi, Artist **Watchmen** Ori Ben-Shabat, Compositor | Jelmer Boskma, Previs Modeler | Freddy Chavez, Compositor | Dominic Cheung, 3D Artist | Ben Dishart, Texture Artist | Ty Duperron, Modeler | Pearl Hsu, 3D Artist | Bernhard Kimbacher, Digital Artist | Sean Lewkiw, Technical Head of 3D | Matthias Lowry, Digital Compositor | James McPhail, Digital Effects Artist | Jacob Curtis Miller, Digital Artist | Lon Molnar, Visual Effects Supervisor | Harry Mukhopadhyay, Lead Effects TD | Cynthia Rodriguez del Castillo, Digital Artist | Derek Stevenson, Matchmove Artist | Shawn Walsh, Visual Effects Supervisor | Samson Wong, Compositor **Wheelman (VG)** Laura Gorrie, Senior Animator **Whiteout** Armando Velazquez, Digital Compositor | Clement Yip, Animator **Wolfenstein (VG)** Jason Martin, Modeler **X-Men Origins: Wolverine** Geeta Basantani, Digital Matte Painter | Rommel Shamoun, Compositor | Jeremy Stewart, Previs Artist **Zombieland** Mike Rhone, Visual Effects Artist

DIGITAL ART MASTERS VOLUME 4



4

VOLUME 4
Focal Press



With the release of 3DTotal's latest book, *Digital Art Masters: Volume 4*, we have some exclusive chapters for you...

This book is more than just an artwork book. Not only does it feature full-colour, full-page images, but each artist has given a detailed description, in their own words, of the creation process behind each piece of published artwork. And they've done it especially for this book!

This month we feature:

“COUCH BY THE WINDOW”

BY VIKTOR FRETYÁN

3DC next month

Here is what's in next month's issue of 3dcreative

Tutorials

Mudbox Female

Character Creation:

Chapter 2 - Obese

by Wayne Robson

NEW!!! How to Stylize and Model Toon Animals

Chapter 1 - Concept

by Jose Alves da Silva

NEW!!! Environment

Lighting: Indoor Scene

Chapter 1 - for 3ds Max + Vray

3ds Max + MR, Maya, Cinema4D

Introduction to Rigging

Chapter 3 - for 3ds Max & Maya

Interviews

Ilya Nedyal

Galleries

another 10 of the best

Images from around the world!

Making of's

Making of Judge Death Beauty Shot

by Petr Nasirov

visit www.3dcreativemag.com for full information and to purchase current and previous issues for only £2.75 each!

Image by Viktor Fretyán





Subscribe

SUBSCRIBE NOW & SAVE UP TO 25%
on this already amazing value publication!

12 ISSUES FOR THE PRICE OF 9
£24.75 save £8.25 (approx - \$35.91 save \$11.97)

6 ISSUES FOR THE PRICE OF 5
£13.75 save £2.75 (approx - \$19.95 save \$3.99)

Have your 3DCreative Magazine
Download link delivered automatically
to your inbox every month...and have
it before anyone else!

**3dtotal.com**

Is a resource website for the CG community; amongst our growing number of products for CG artists, we produce two monthly downloadable PDF magazines – *2DArtist* and *3DCreative*. We are based in the West Midlands, in the UK, and our intention with our magazines is to make each issue as full of great articles, images, interviews and tutorials as possible. If you would like more information on 3DTotal or our magazines, or if you have a question for one our team, please use the links below.

CONTACT INFORMATION<http://www.3dtotal.com><http://www.3dcreativemag.com><http://www.2dartistmag.com>

Editor & Content Manager > Simon Morse

simon@3dtotal.com

Lead Designer > Chris Perrins

chrisp@3dtotal.com

Marketing > Claire Hughes

claire@3dtotal.com**PARTNERS**

If you have a CG community website and would like to support *3DCreative* and/or *2DArtist* magazine by showing our banners, please contact Lynette Clee at the email address above



Eva Wild

Female Characters Creation

Introduction:

The 'Eva Wild Series' – Our aim in this series is to provide comprehensive lessons to produce a complete fully rigged, textured and anatomically correct female character. This series fits well into 3 DVDs with 3 separate professional 3ds Max instructors taking you through each of their specialties in very detailed step by step processes making this training suitable for artists of all levels.



Part 1 - Modelling:

- Complete step by step modelling of the Eva Wild character.
- Teaches the importance of studying human anatomy.
- Provides clear diagrams showing muscle flow and bone structure.
- 14 hours of comprehensive training.
- Suitable for artist of all levels.



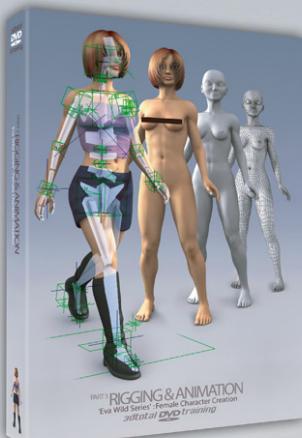
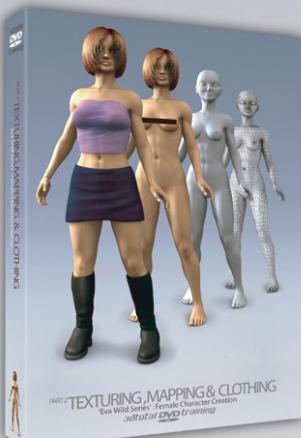
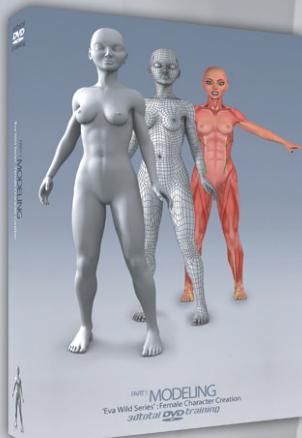
Part 2 - Texturing, Mapping & Clothing:

- Complete step by step texturing process of the Eva Wild character.
- Modelling and Texturing of Eva Wild garments.
- Lighting the character.
- 4 hours and 47 mins of comprehensive training.
- Suitable for artist of all levels.



Part 3 - Rigging & Animation

- Complete step by step of setting up a fully animatable rig for the Eva Wild character.
- Creating a walk Cycle.
- Creating a simple face morph.
- 7 hours and 43 mins of comprehensive training.
- Suitable for artist of all levels.



3dtotal.com

for more products in our range visit <http://www.3dtotal.com/shop>

This series of five tutorials will focus on the topic of outdoor lighting and more specifically the task of setting up different light rigs to reflect a variety of weather scenarios. Each of the chapters will use the same base scene as a starting point and show a step by step guide to finding a lighting and rendering solution to describe a set time of day under different conditions ranging from a damp foggy night to sunset / sunrise.

The tutorials will explain the type of lights used and how to set up their parameters alongside the combined rendering settings in order to achieve an effective result. The manipulation of textures will also be covered in order to turn a daylight scene into night for example, as well as a look at some useful post production techniques in Photoshop in order to enhance a final still.

CHAPTER 1 | JANUARY ISSUE 053

Fog/Mist at Night-Time

CHAPTER 2 | FEBRUARY ISSUE 054

Sunrise/Sunset

CHAPTER 3 | MARCH ISSUE 055

Moonlight

CHAPTER 4 | APRIL ISSUE 056

Midday Sun

CHAPTER 5 | THIS ISSUE

Overcast



- FREE SCENE

THIS DOWNLOAD INCLUDES
THE ARTIST FINAL SCENE SET UP

ENVIRONMENT LIGHTING: OUTDOOR

CHAPTER 5: OVERCAST

CHAPTER 5 - OVERCAST

Software Used: 3ds Max + Mental Ray

INTRODUCTION

During this exterior lighting series I will be covering the techniques I used to create various time and weather conditions using 3DS Max and the Mental Ray renderer. I will be concentrating on describing my lighting methods rather than any modelling or texturing that may need to be done. I have created as much of the image as I can in Max; leaving the Photoshop 'polish' to a bare minimum to achieve the final result.

Overcast is going to be quite a hard subject to get a good result from. Because overcast usually means dull and uninteresting, the lighting will be very soft no obvious shadows to help create depth to the image. No strong light from the sun to pick out the colors in the

textures of the buildings. So to get a good result we could maybe have a break in the clouds to allow some light through just strong enough to pick out the detail and just strong enough to create some highlights on the edges of the geometry to pick them out. Because it's dark we could also have one or two interior lights creating some points of interest. The weather plays an important part in this image. I will use grey clouds that are not too dark because we don't want to make the viewer think it is night time. This would be very easy to do because of the lack of sun light and because the interior lights are on. I will also add some atmospheric fogging and maybe a rain effect to help convince the viewer it is overcast.

IDENTIFYING LIGHT SOURCES

There usually is no direct source of light in an overcast day. The light bouncing around the

clouds illuminates the environment from multiple angles. But I want to create a break in the clouds to get some direct light and get some darker shadows but with very soft edges. Some of the interior lights will be on but won't have enough power to illuminate the street scene, because it is still day time and the interior lights won't have enough power to make an effect on the surroundings.

We will have to use a lot of bounce light to help illuminate the scene from all angles. I am going to use the same lighting system I used for my previous tutorial "Midday Sun". I used the daylight system to achieve a baking hot day and create bounce light from the blue sky. I will use the same techniques to achieve an overcast day.

Here is the Image before any lighting has been applied. (Fig.01)

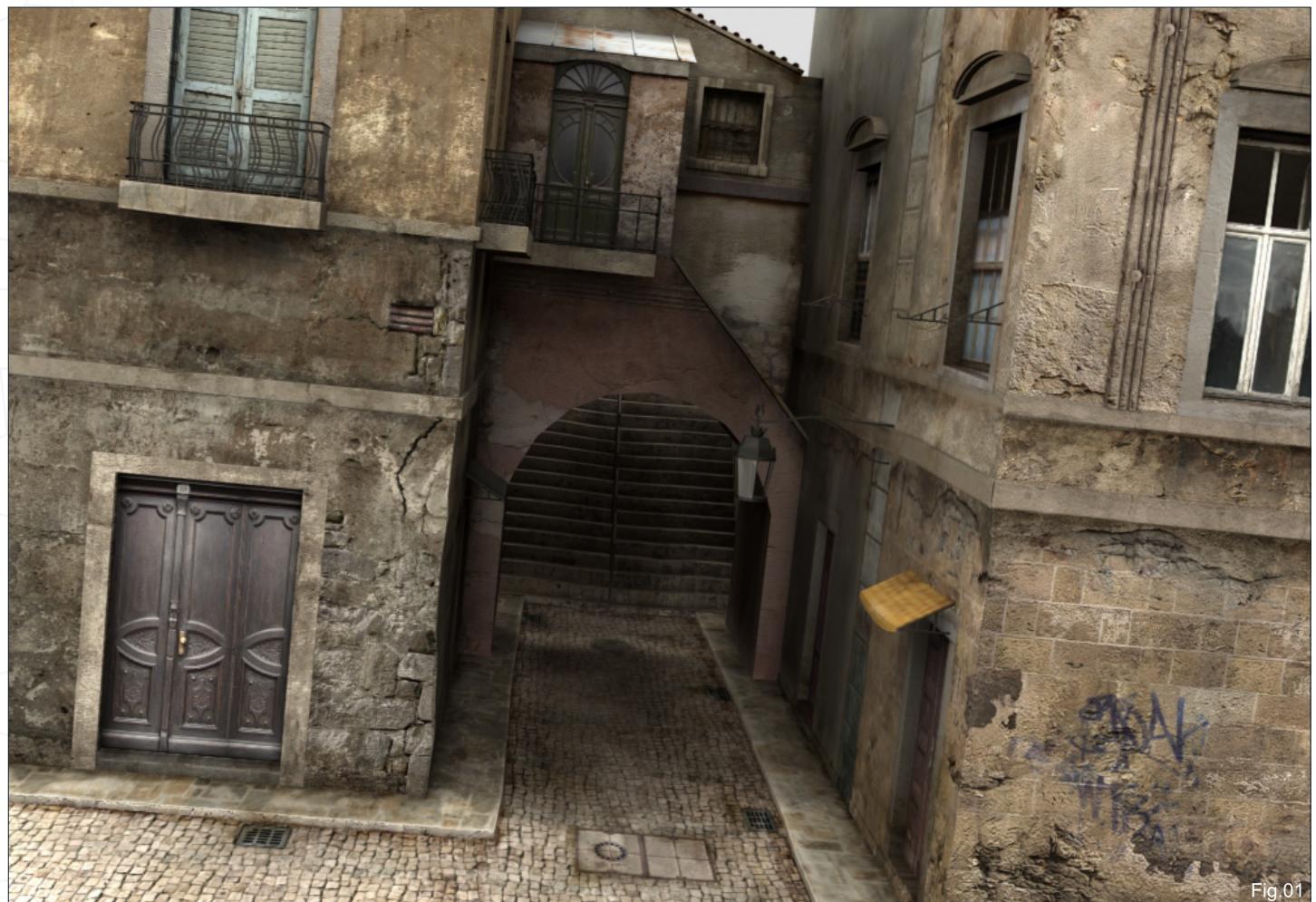


Fig.01

SETUP DRAFT RENDER

When lighting any image, you can't expect to achieve the final result first time. In anticipation of a lot of 'tweaking', I setup the renderer to a draft setting so it sped up the render times to a more workable rate. I set the render size to 360*480 and in the indirect illumination tab I set the Final Gather to draft and the bounce light to 0. This will allow me to render out as quickly as possible.

OVERCAST LIGHT

The overcast light is created using the Daylight system. This is located in the create tab under systems. When you click on Daylight system you will be asked if you want to change the exposure settings. I clicked yes for this to give us better results in the final render. In the viewport you click and drag a compass, then when you release the mouse button the sun object is then created and you can position this quite high above the scene to simulate the sun.

Here is an image of the viewport containing the daylight system (Fig.02)

If you hit render now you will get an uninteresting image but it will contain shadows and global illumination. We need to alter many settings to get the desired effect, I will start from the top and work my way down the properties of the daylight system.

Here is a render with the default daylight system settings. (Fig.03)

DAYLIGHT PARAMETERS

Sunlight - mr Sun

Skylight - Skylight (This option allows us to use a HDR image for the GI)

Position - Manual (This allows us to move the sun to where we need it)

MR SUN BASIC PARAMETERS

Multiplier - 0.7

Shadows - On

Softness - 30

Softness Samples - 28

Inherit from mrSky - Unchecked

nonphysical Tuning

Red/Blue Tint - -0.1

Saturation - 2.0

SKYLIGHT PARAMETERS

Multiplier - 0.2

Sky Colour - Check 'Use Scene Environment'

(we can now add a HDR map to the background in the 'Environment and Effects window').

I got the settings above to by tweaking the values and test rendering until I was happy with the shadows, color of light and the power of the light and bounce light. We also need to change the settings in 'Exposure Control' to get a better render. This can be accessed by going to 'Rendering/Environment' in the menus or by pressing '8'

Here are the settings I used in this window:

COMMON PARAMETERS

Check 'Use Map'

I then added a HDR map in the map slot. They can be found quite easily if you search for them and download the one I like the look of. I can't show it because of copyright issues but you should be able to find one easily.

EXPOSURE CONTROL

Select from the drop down menu - mr Photographic Exposure Control

MR PHOTOGRAPHIC EXPOSURE CONTROL

Check Photographic Exposure

Image Control

Highlights - 0.96

Midtones - 1.08

Shadows - 0.25

Colour Saturation - 0.9

Whitepoint - 220 Kelvin

Vignetting - 3.4

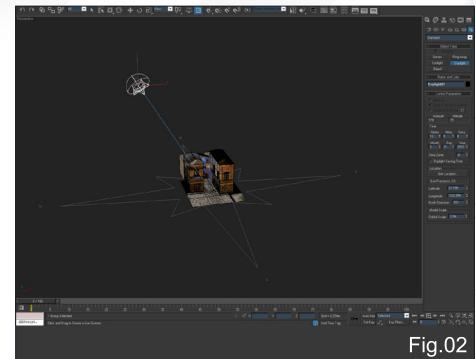


Fig.02



Fig.03

Physical scale

Check Unitless - 20000

Because the environment is out of scale according to the real world we need to scale down the properties so we get a more accurate calculation of daylight I found a 'Physical Scale' of 25000 worked well for this scene.

With all the setting done we need to change some things with the HDR map. With the Environment and Effects window still open click and drag the .hdr map into an empty slot in the material editor and click 'Instance'

COORDINATES

Check Environ and change the Mapping to 'Spherical Environment'

This will wrap the .hdr image around the scene.

So with all that done it's time for a medium render and to check for any issues before we start the final large render.

INTERIOR LIGHTS

I placed mr_Omni lights inside a fake room (upper right) that I have carved out of the walls

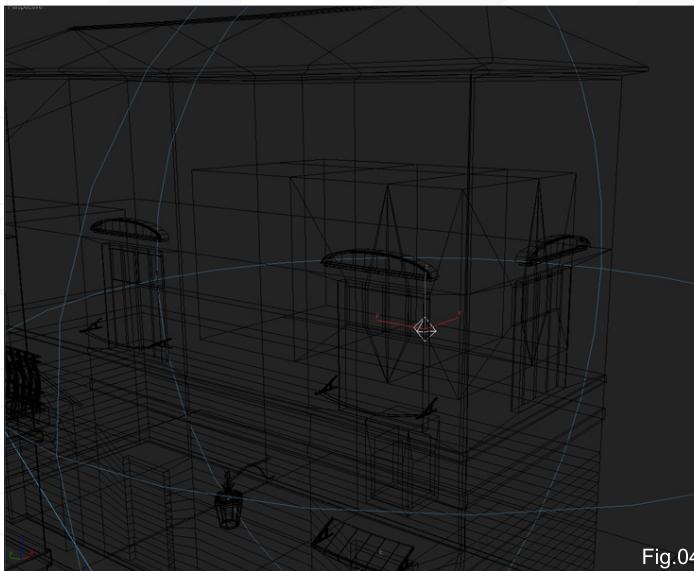


Fig.04

using the same techniques as in previous chapters of this lighting tutorial series. I gave the Omni light an orange tint and a low power.

Here are the lights inside the fake rooms.

(Fig.04)

After placing the interior light it was time for a medium render to see if any changes needed to be made before we set a final render going.

MEDIUM RENDER

I set the renderer to medium image precision and medium Final Gather settings. I still haven't enabled bounce light yet as it would increase

the render times. I increased the size of the render to 800*600. With these settings I was able to see any problems that may occur.

I was quite happy with the medium sized render and I couldn't see any major issues. Some color correction needed to be done in Photoshop but this is normal with any image; it adds that extra bit of polish to the art work. I was now ready to go ahead and set up a high quality render.

FINAL RENDER SETUP

Here are the settings used for the large final render (Fig.05)

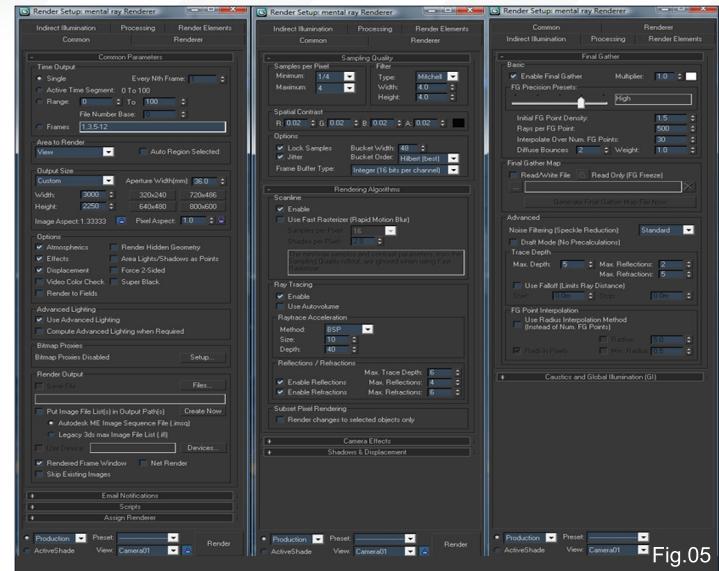


Fig.05

I will use Alpha and ZDepth render elements and composite them in Photoshop to help me get the best image possible.

So with everything set up it's time to hit that render button for one last time!

Here is the final out come from the Mental Ray renderer. (Fig.06)

Now that we have everything we need we can import them into Photoshop and start the polishing stage.

PHOTOSHOP COMPOSITE

For the clouds I used a simple brush with a soft edge and painted in white and grey clouds very subtly to give the effect of heavy rain filled clouds.

Using the Zdepth render element I inverted it then turned the layer to 'Screen' and adjust the opacity until I got a slight fogging effect.

I then added a little 'Depth of Field' to give us a photorealism look. I achieved this by putting the Z-depth render element into the Alpha channel of the image and in the effects menu added a Lens Blur effect and set it to use the Alpha channel. After adjusting the settings I was able to get a realistic effect but be careful not to over do it, it's easy to over blur the image and ruin



Fig.06

the effect so subtlety is the key at this stage. The good thing about Lens Blur is you can add specular blur to your highlights in the image further enhancing the photorealism we want to achieve.

I finally adjusted the color using the colour balance adjustment and the photo filter adjustment to get the desired effect. I found there was a little too much color in the image and as this was a dull overcast day so I desaturated the image a little to drain away the colour further enhancing the miserable day.

Here it is, the finished Image. (**Fig.07**)

CONCLUSION

I feel the final render shows a dull overcast day. I found it quite a challenge to get a good result without the image being.... well... too dull! Little effects like slight fogging and rain help to achieve the mood also the lighter grey clouds keep the image from looking like a night time render. I'm happy with the final render and I learned a lot making the image. Learning not to rely on strong light and shadows to make an impact on the image was a challenge. I hope you also found this tutorial helpful. Thanks for following these lighting tutorials they were a lot of fun to make and taught me many different techniques to get a quality render not only out of 3DS Max but also post production in Photoshop. I've now caught the bug of making tutorials so look out for more from me.

Thanks again.

create Tutorial by:
ANDREW FINCH

For more from this artist please contact them:
afinchy@googlemail.com



- FREE SCENE
THIS DOWNLOAD INCLUDES
THE ARTIST FINAL SCENE SET UP



Fig.07

This series of five tutorials will focus on the topic of outdoor lighting and more specifically the task of setting up different light rigs to reflect a variety of weather scenarios. Each of the chapters will use the same base scene as a starting point and show a step by step guide to finding a lighting and rendering solution to describe a set time of day under different conditions ranging from a damp foggy night to sunset / sunrise.

The tutorials will explain the type of lights used and how to set up their parameters alongside the combined rendering settings in order to achieve an effective result. The manipulation of textures will also be covered in order to turn a daylight scene into night for example, as well as a look at some useful post production techniques in Photoshop in order to enhance a final still.

CHAPTER 1 | JANUARY ISSUE 053

Fog/Mist at Night-Time

CHAPTER 2 | FEBRUARY ISSUE 054

Sunrise/Sunset

CHAPTER 3 | MARCH ISSUE 055

Moonlight

CHAPTER 4 | APRIL ISSUE 056

Midday Sun

CHAPTER 5 | THIS ISSUE

Overcast

**DOWNLOAD
RESOURCES** 

- FREE SCENE & TEXTURES

THIS DOWNLOAD INCLUDES

THE ARTIST FINAL SCENE SET

UP + TEXTURES


3ds max
+ v-ray

ENVIRONMENT LIGHTING: OUTDOOR

CHAPTER 5: OVERCAST

CHAPTER 5 - OVERCAST

Software Used: 3ds Max + V-Ray

This month's assignment is overcast sky – probably even more common than last months' sunlight. Overcast sky lighting might be a bit problematic though – while technically quite simple, it'll most likely look very dull and uninteresting, at least straight from the renderer. In this case, some kind of art direction is necessary – I don't want to end up with a gray image. I found my inspiration in a wonderful movie called "Delicatessen", with its gritty, warm colored imagery. Most of the look lies in color correction and post-production, so I'll try to get a neutral-looking raw rendering, and work on the look in post.

Let's take a look at our scene (Fig.01). Lighting-wise, overcast day shares some similarities with daytime sunlight, since the light sources are the same just with different properties. Sun is still a key light, but it's not as strong, and is diffused with soft shadows. Sky is usually a bit gray, not tinting the shadows – and the most important thing, it has a stronger contribution to the overall effect. The ratio between the two can vary, from totally overcast with no directional light whatsoever, to sun hiding behind a thinner layer



Fig.01

of clouds. I chose to have some directional light, but with very soft shadows, because it makes the scene more interesting.

This is another occasion to use Vray Sun & Sky system – maybe it's not exactly what it's made for, but it can work quite well. It should give us a good looking, but 'neutral', and a bit generic image. I'm using it in tandem with GI. Mostly I use Irradiance Map for the first bounce and

Brute Force for the secondary bounces – that is the default setting, which works for me in most cases (Fig.02 – preview settings). Detailed settings, like number of bounces, or Irradiance Map size of course vary over time – low quality for previews, higher if the scene requires it. For still images, as in this case, I try to use fastest (lowest) setting possible, while still getting an acceptable result. For animation, the Medium Animation setting is usually safe, flicker free option. I also use a healthy dose of global Ambient Occlusion to add some detail to the shadowed parts of the image.

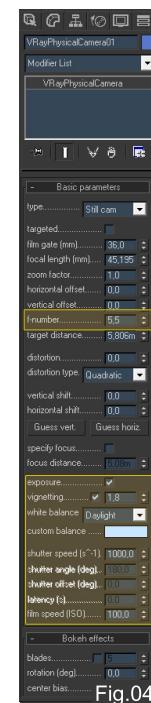
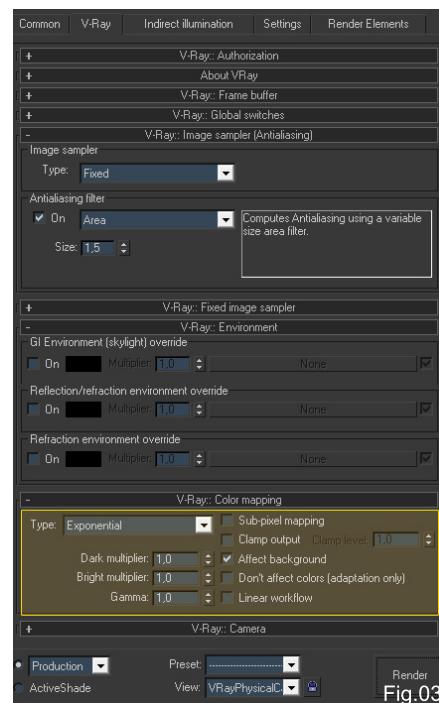
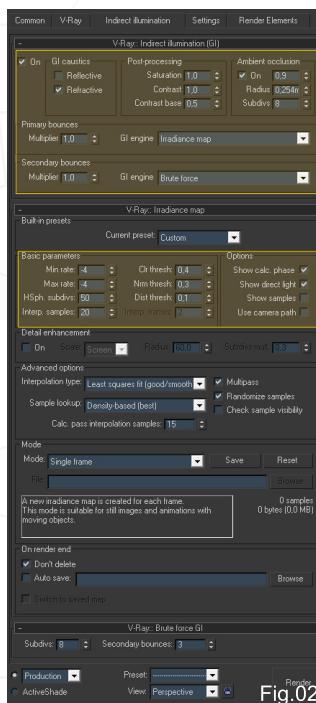


Fig.02

Fig.03

Fig.04

One of the first things I usually do is set the Color Mapping to Exponential (Fig.03). While this isn't probably the most physically correct way, it has some advantages. The way it works is it prevents over bright 'hotspots', and oversaturated color transitions. It's also very tolerant – it's really hard to whiteout the image, and the lights have a very wide range of usable multiplier/strength settings (but that range often ends up being pretty high, like 512 or so, especially with the fog on). It has downsides too, making the colors look desaturated and decreasing the contrast of the image. I actually like it that way, because I can easily bring back

the contrast and saturation in post production, and for some scenes it just fits – but if you don't like it, there's HSV exponential mode, which keeps the colors better. Generally though the main use I have for default Linear Multiply is rendering some additional passes like masks.

The scene needed some preparations – adding VrayDisplacement to the street surface, some reflections to the windows (using blend material, VrayMtl for the windows, and a b&w mask). Metal parts, like railings and lamps also got a shiny, reflective VrayMtl.

Before rendering anything I created VRayPhysicalCamera, so I could control the brightness of the scene in a more intuitive way (as I have a bit of photographic experience). The settings pictured on (Fig.04) took some trial and error to get right – generally, if the scene is more-or-less built in real world scale, the settings that would work if we were to take a photo of that scene in real life, are a good starting point. Here, I diverged a bit from the real world settings – but that's ok. The Vignetting option is quite useful here, darkening the corners of the image, and focusing the viewer's attention at the central part of the image.

Now it's time to create the sun. Let's choose VraySun. The pop-up will appear asking about adding VraySky in the Environment slot – I hit OK, since you'll need it. Next I switched VraySky to manual sun node, and appointed the newly created VraySun as the sun node, and tweaked the parameters a bit. Adjusting the intensity allows me to tune the balance between sun and

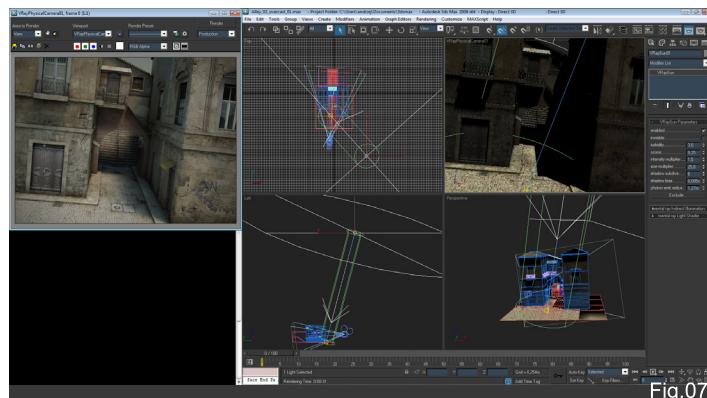


Fig.07

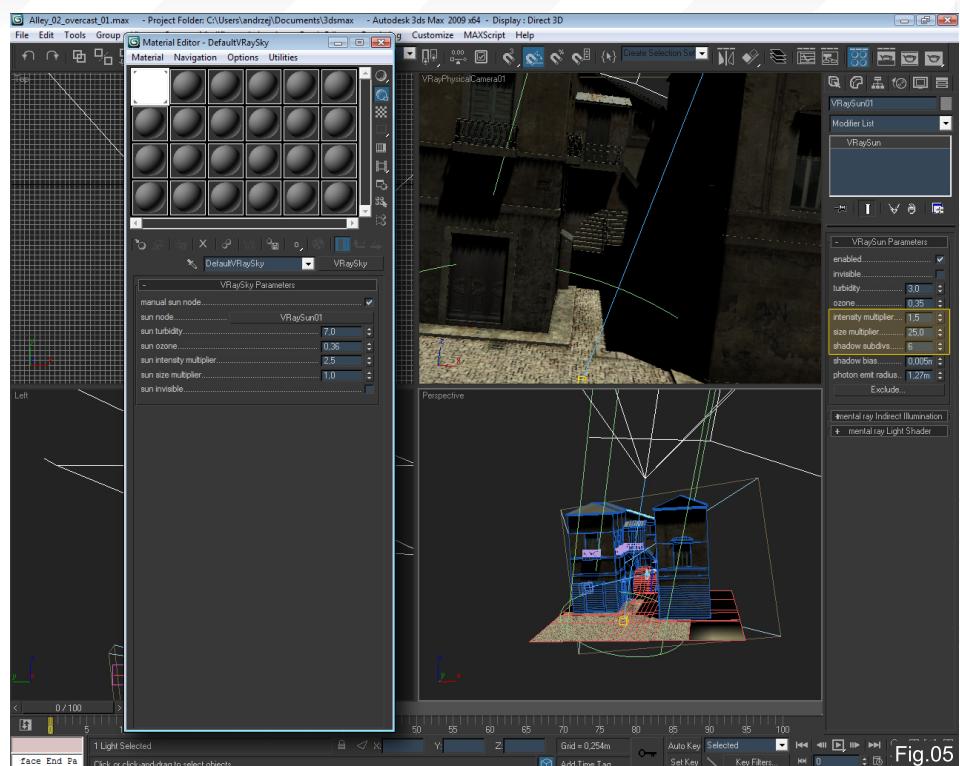


Fig.05

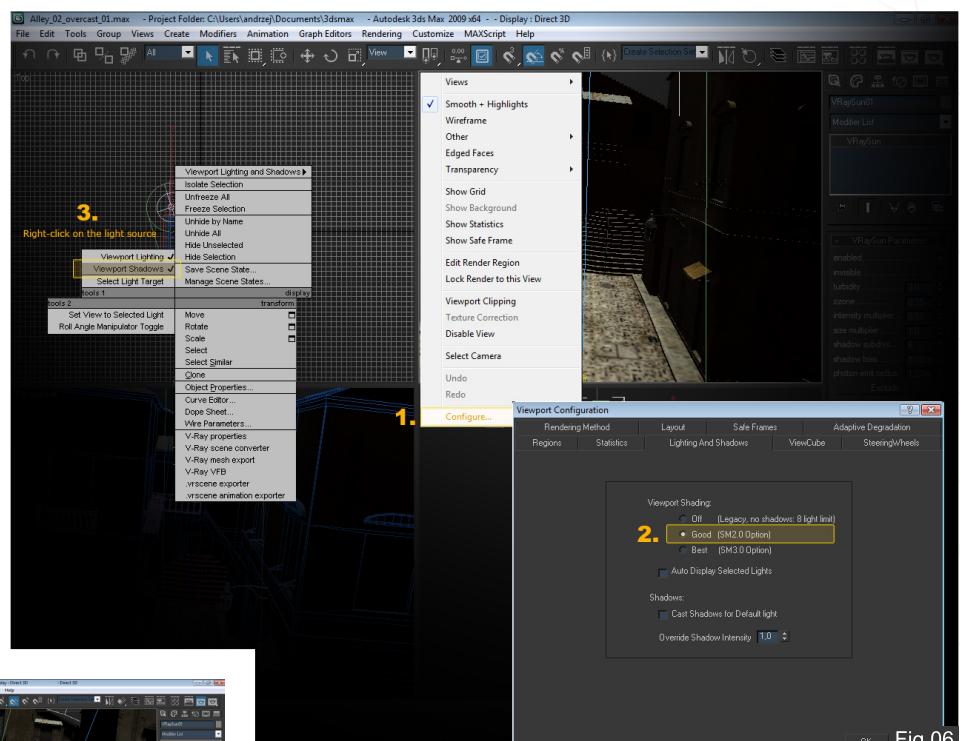


Fig.06

sky light. The most important setting is to increase the sun size quite a lot, to blur the shadows (Fig.05). The shadows, while very soft, are still true area shadows, not uniformly blurry shadow maps – the difference may be subtle, but is important.

To position the sun it's good to display shadows in the viewport (Fig.06). That way I can see the shadows in real-time, and finding a nice composition can be really fast. I chose to have the sun coming from the

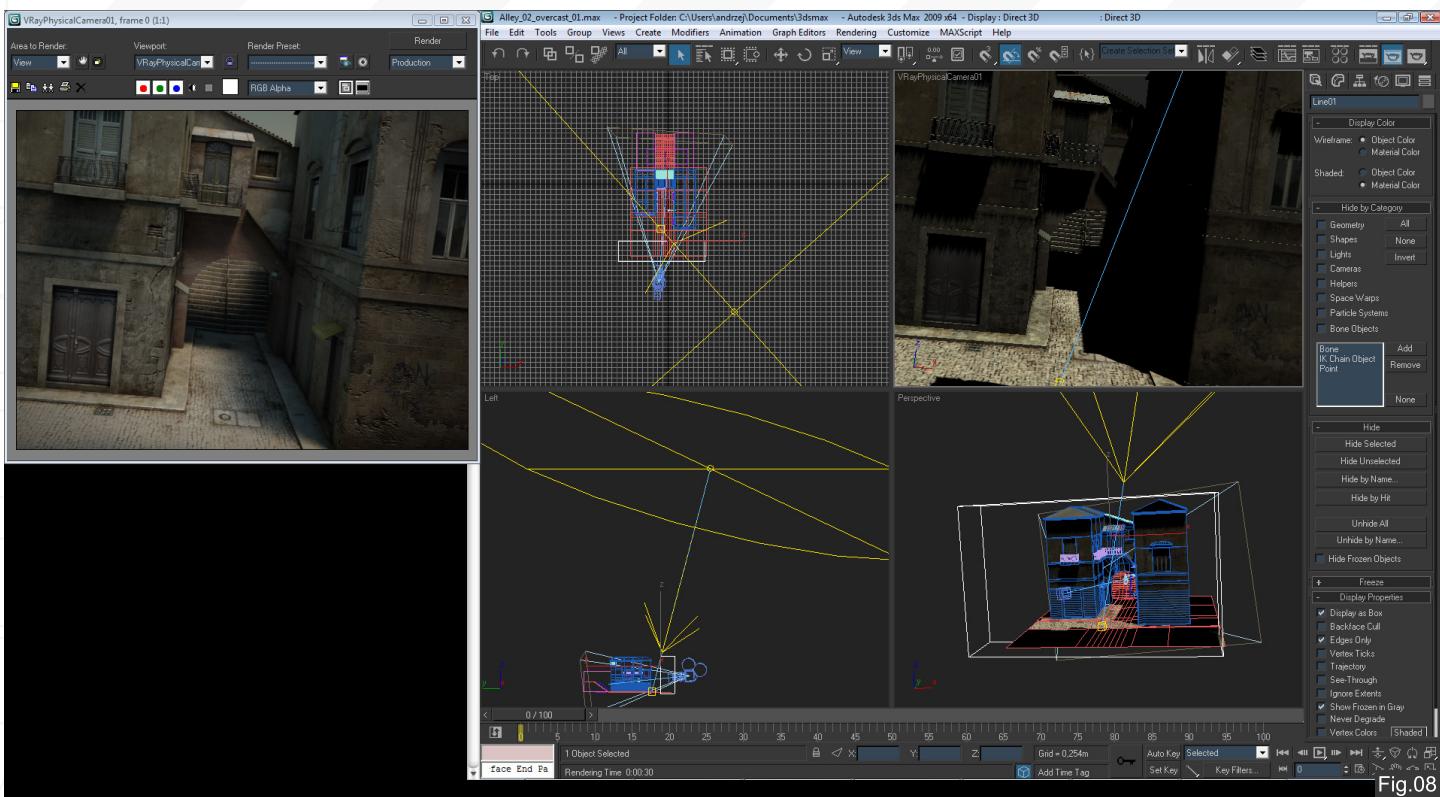


Fig.08

left – but since the shadows will be very soft, precise angle is not that important (Fig.07).

If we look at the rendered image, we see that front facing walls are too bright, making the image look flat and not menacing enough. The easiest way to darken them is by placing an

invisible to camera object, to occlude some of the skylight (simulating the buildings at the other side of the street) (Fig.08). A bit better, but that is still a very generic looking, boring image.

Now comes the time for final rendering and post-production. I already did some tests on a

low-res preview – which is something I really recommend doing. It's easy to spot problems and fix them before rendering the high-res and wasting hours if it's wrong in some way. What I want to do is add a lot more contrast, and shift the color palette toward warm colors. I did it by using curves to add contrast, by shaping the RGB curve, and using Color Balance to get rid of the blue colors (Fig.09). Increased contrast nicely exaggerates the contact shadows/occlusion in the corners, as I hoped it would. The next step was a slight orange/yellow cast – the movie I mentioned as an inspiration has a very strong orange color cast. I didn't go as far as they did in the film as it was starting to look a bit too monochromatic. I did some other, mostly localized tweaks. I added highlight the glow, grain, some texture overlay, etc – pretty standard fare. (Fig.10) shows the final image.

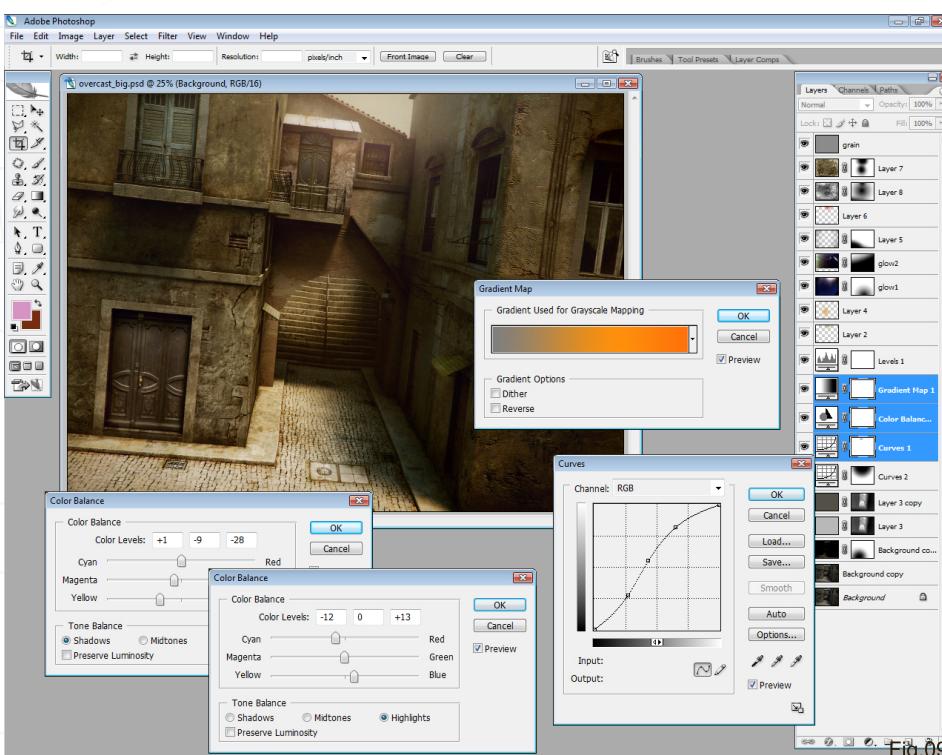


Fig.09

This case lies on the edge of usefulness of the Sun&Sky system – but with some clever settings, it can be quite useful even here. Of course, there may be a need to supplement it with additional lights – but here, it's just enough. There's a caveat, though – images done that way tend to look quite bland and similar to each

other, so it's good to customize the settings a bit, and do some post-production magic to add a personal touch – treating the rendered image as a raw material rather than final image.

ANDRZEJ SYKUT

For more from this artist visit:

<http://azazel.carbonmade.com/>

Or contact them:

eltazaar@gmail.com



**DOWNLOAD
RESOURCES** 

- FREE SCENE & TEXTURES

THIS DOWNLOAD INCLUDES THE ARTIST
FINAL SCENE SET UP + TEXTURES



Fig.10

This series of five tutorials will focus on the topic of outdoor lighting and more specifically the task of setting up different light rigs to reflect a variety of weather scenarios. Each of the chapters will use the same base scene as a starting point and show a step by step guide to finding a lighting and rendering solution to describe a set time of day under different conditions ranging from a damp foggy night to sunset / sunrise.

The tutorials will explain the type of lights used and how to set up their parameters alongside the combined rendering settings in order to achieve an effective result. The manipulation of textures will also be covered in order to turn a daylight scene into night for example, as well as a look at some useful post production techniques in Photoshop in order to enhance a final still.

CHAPTER 1 | JANUARY ISSUE 053

Fog/Mist at Night-Time

CHAPTER 2 | FEBRUARY ISSUE 054

Sunrise/Sunset

CHAPTER 3 | MARCH ISSUE 055

Moonlight

CHAPTER 4 | APRIL ISSUE 056

Midday Sun

CHAPTER 5 | THIS ISSUE

Overcast



- FREE SCENE & TEXTURES

THIS DOWNLOAD INCLUDES

THE ARTIST FINAL SCENE SET

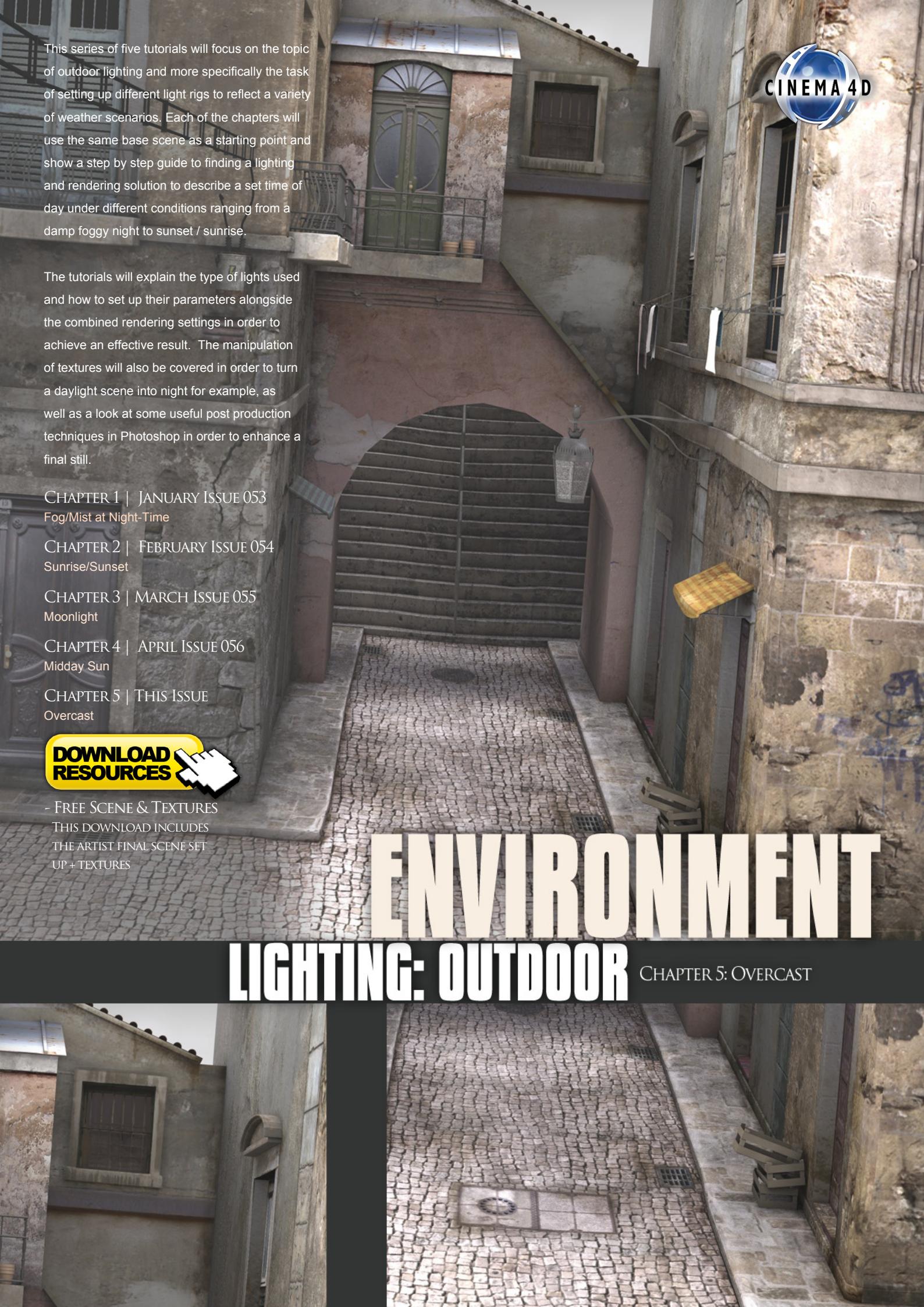
UP + TEXTURES



ENVIRONMENT

LIGHTING: OUTDOOR

CHAPTER 5: OVERCAST



CHAPTER 5 - OVERCAST

Software Used: Cinema 4D 11.5

ABOUT THIS TUTORIAL:

This is the fifth and last part of our series of exterior lighting tutorials for Cinema 4D.

The files for this tutorial were created by using the release 11.5. In contrast to the tutorials in this series before, I will use the GI-features of the Advanced Render 3. So it is necessary to own this module of Cinema 4D. Of course some settings could be reproduced with earlier versions, as well or even with classical lighting setups.

So let's start

INTRODUCTION

Especially at this time of the year we often experience this kind of weather: clouds are covering the sky and the sun light is softened by them. The thicker these layers of clouds are, the stronger this effect does it's work. But that does not mean that no defined shadows exist in such a situation...

THE RENDER SETTINGS

As you can see, I have chosen a resolution of 2000 pixels wide again. In my eyes it is a good combination of render quality and speed. In my everyday workflow I often use this resolution for proofs.

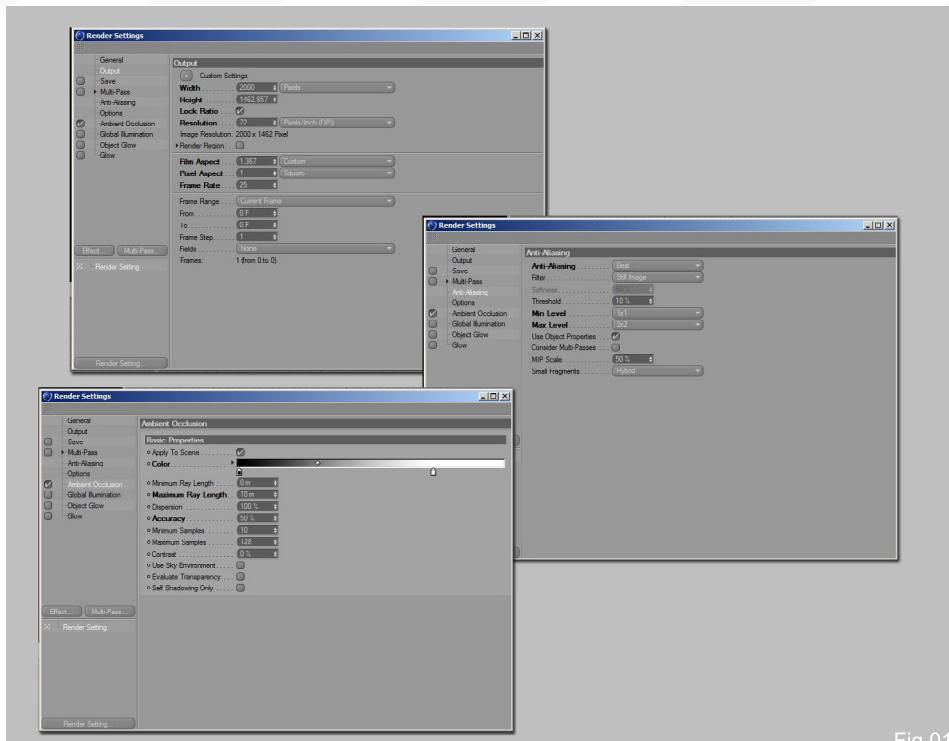


Fig.01

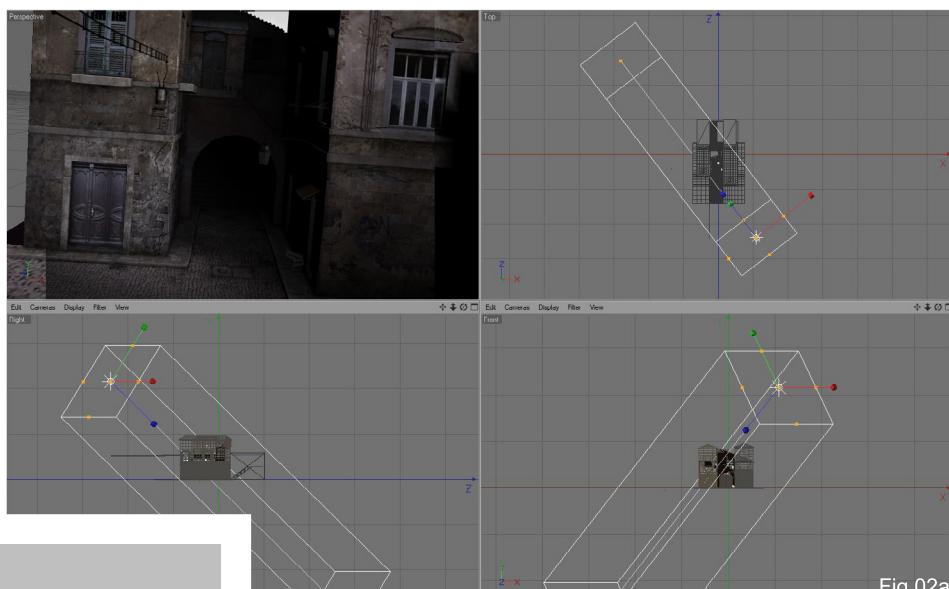


Fig.02a

The ambient occlusion gives an extra contrast in the shadowed areas of our scene and underlines the grungy appearance of this set (Fig.01). In overcast Tutorial folder

THE MAINLIGHT

Well this is the key light for our scene, but it is one of the darkest lights at the same time. In combination with all the other layers it will deliver a slightly visible direction of shadow dropping later on.

I am using an area light source here in order to create that typical kind of damped light. The contrast is set to -65% (!). If you change this parameter to 0, you can simulate a more direct and less softened sun light

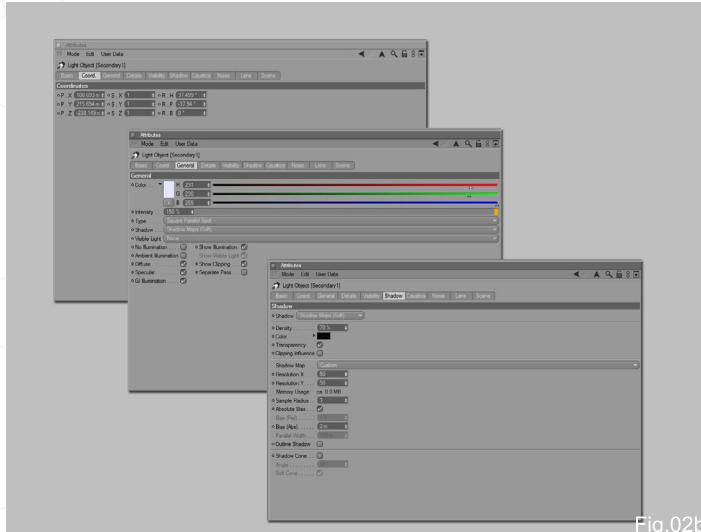


Fig.02b

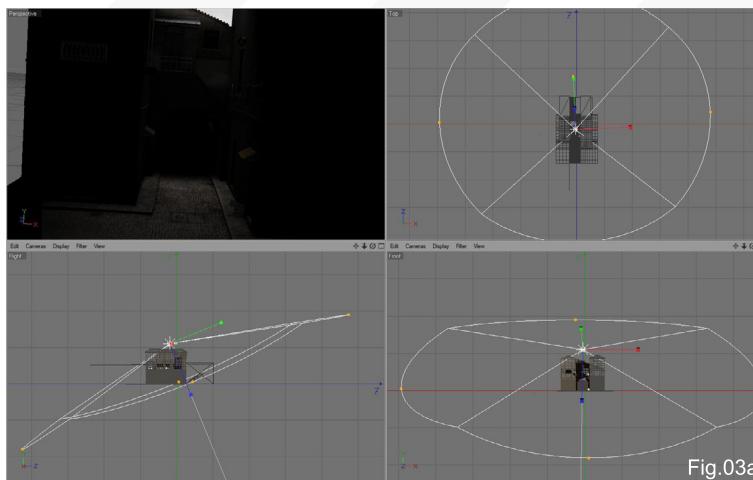


Fig.03a

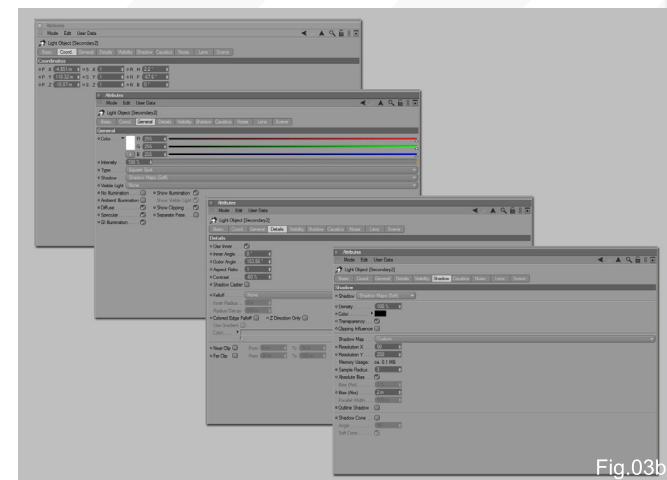


Fig.03b

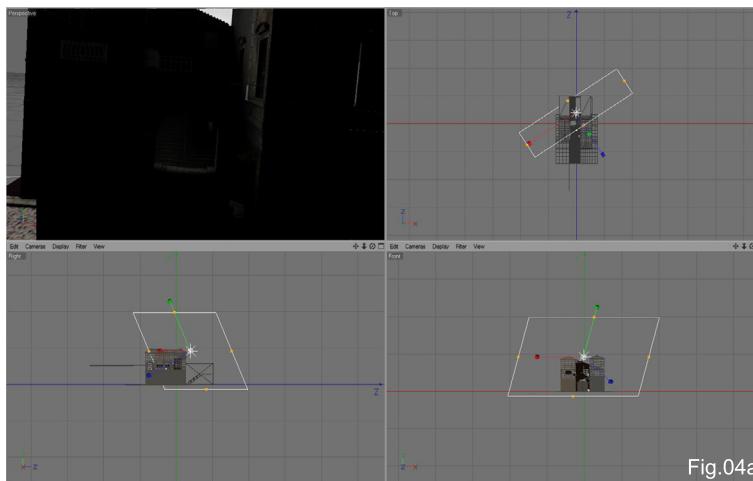


Fig.04a

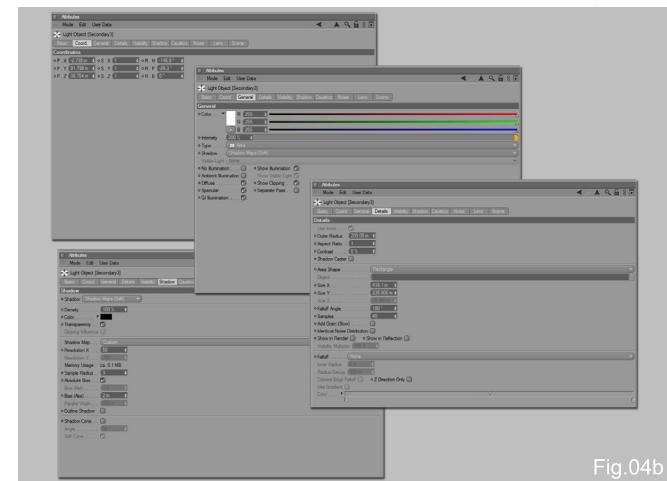


Fig.04b

situation. Try it. The color of this light source is pale blue and the strength is set to 280%. The editor view gives you an indication of the nature of this layer in the whole scene (Fig.02a – 4b).

The secondary pass shows the result of this (Fig.05).

THE SHADOW DROPPERS

Well, it looks a bit paradox to place some shadow droppers for the illumination of this little street, but it isn't. It gives us more control over the distribution of light and dark areas in the set.

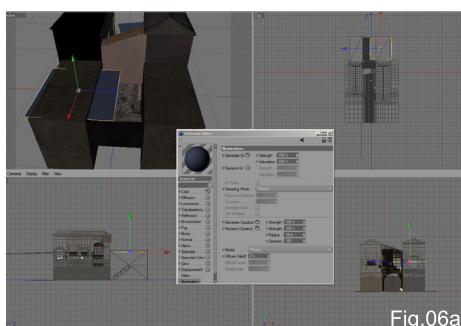


Fig.06a

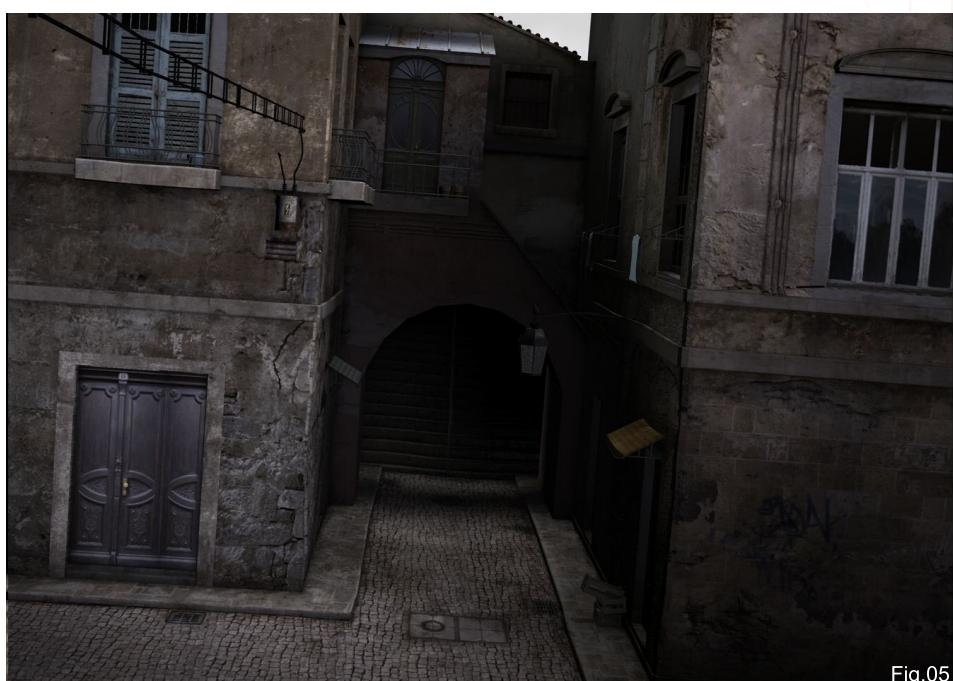


Fig.05

Looking at the 'shadower mat' settings we can see that a dark blue color is defined and the illumination settings for the gi influence are set to generate only. This gives us the possibility to

create a slight color bleeding effect later on, as we have to keep in mind that gi will be used in this setup. The shadows caused will be more blueish and soft. We do not want to create sharp

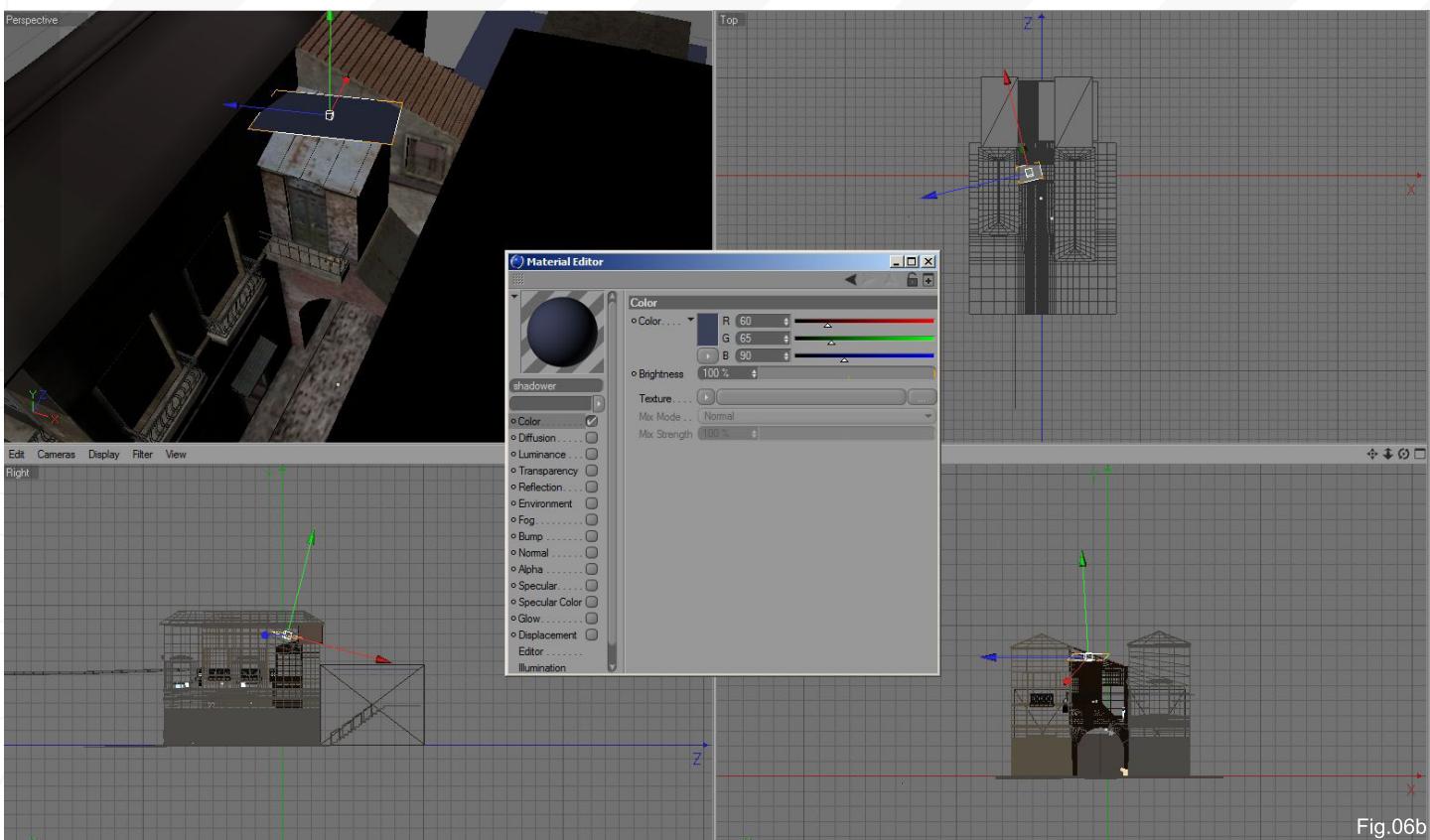


Fig.06b

edged shadow areas here. Using a compositing tag prevents making the shadow droppers visible to the camera (Fig.06a – c).

THE GI SETTINGS

As I said already, gi is used here. The irradiance gi mode works well here. I tried some of the other modes, but this one came out as the most

fitting one. Sometimes it is a kind of trial and error game.

The diffuse depth is set to 2. Increasing this parameter to 3 or more does not make any visible difference but it can result into an exploding render time very easily. The oversampling is set to "medium" for better

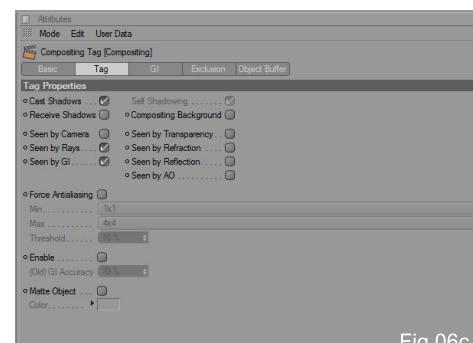


Fig.06c

quality. The distance map feature defines the influence of reflected and diffused light on surfaces in relation to the distances more exactly. Using detail enhancement delivers more exact definition on small structures of the models in this scene. If you are having problems with the performance of your machine while rendering, you can deactivate this features (Fig.07).

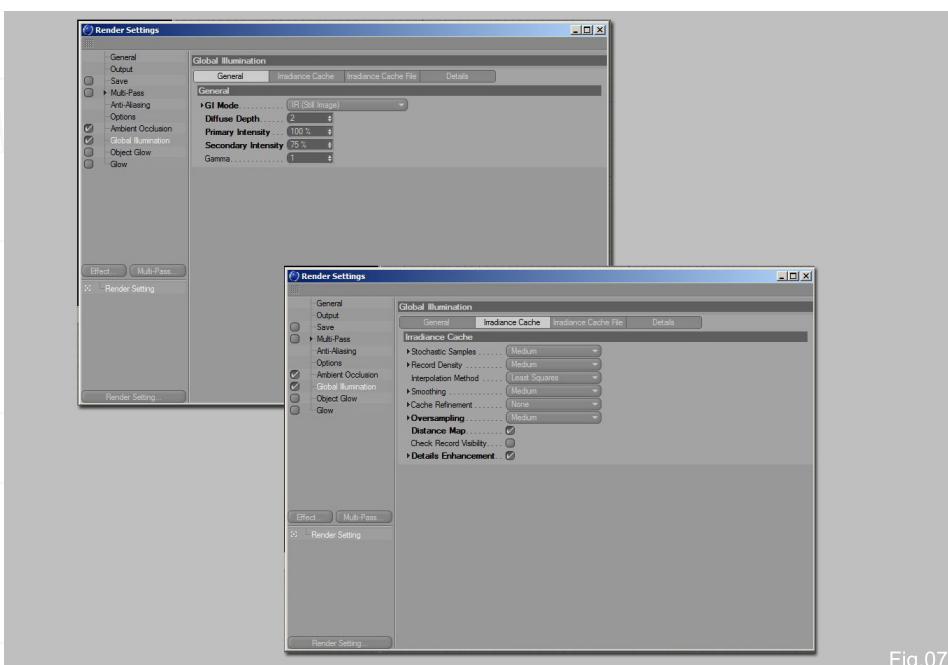


Fig.07

THE SOFT LIGHTS

These lights are not a light source in normal terms. Only in combination with the new gi of the Advanced Render can you define objects textured with a luminance channel and active illuminating lights. I used planes combined

with 100 or 200 % luminance strength and placed them into the scene in order to get more accentuation on several areas of the street scene, which would get lost a bit into the shadows otherwise. Via compositing tags they are invisible to the camera and do not cast any shadows in combination with the normal light sources (Fig.08a – g)

Rendering the softlight pass should now deliver something like this (Fig.09).

THE ENVIRONMENT

Like in all the other parts of this series I'm using an environment object again. This increases the illusion of distance and gives a more realistic effect (Fig.10a – b).

THE RESULT

At the end with all the other components together our illuminated scene should look like this.



Fig.09

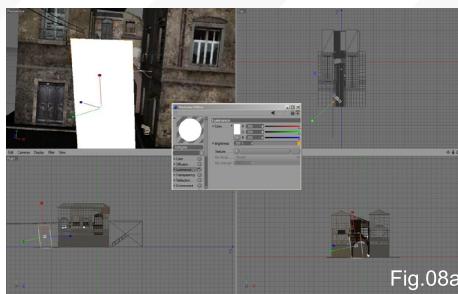


Fig.08a

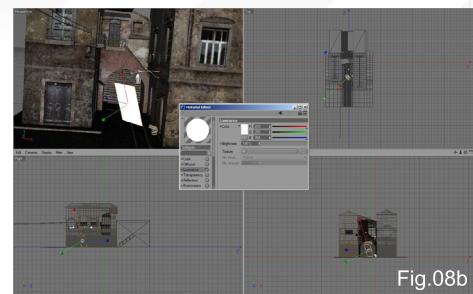


Fig.08b

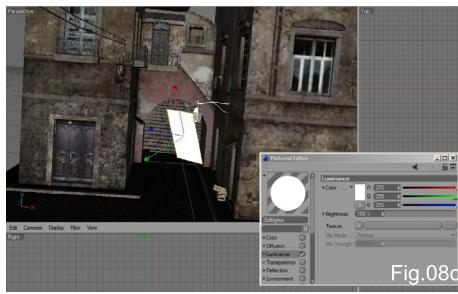


Fig.08c

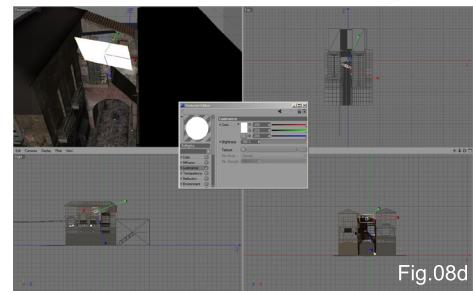


Fig.08d

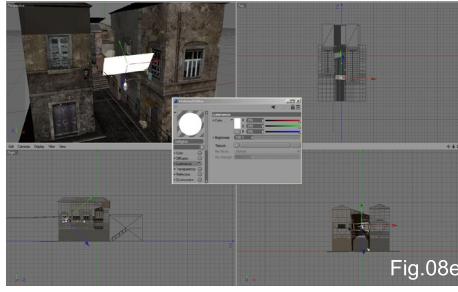


Fig.08e

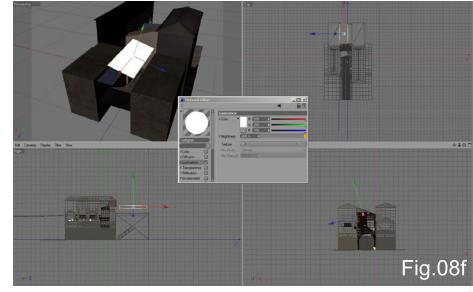


Fig.08f

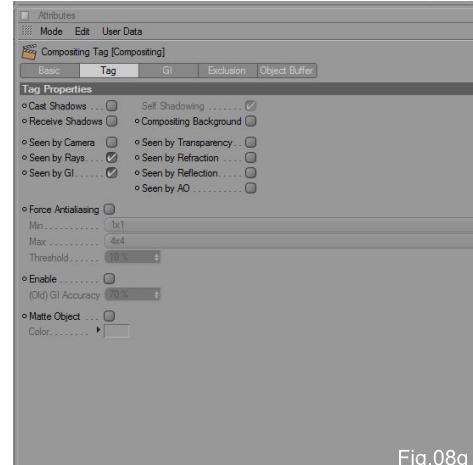


Fig.08g

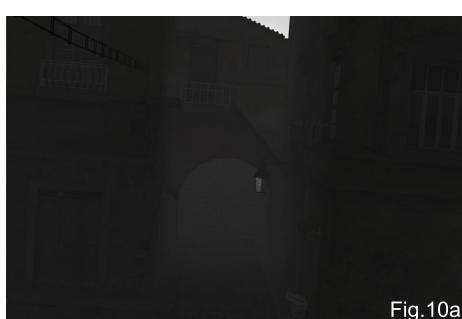


Fig.10a

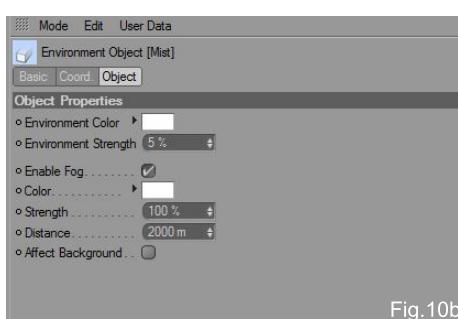


Fig.10b

For me post working is a normal part of the deal. As you can hopefully see in the direct comparison of original render result the post worked images looks better than the original one. If you do not have an application like Photoshop or you are simply not willing to start this kind of work, you can use the filters for the new Advanced Render which now can be found in the menu in the picture viewer in cinema. In the case here I simply tweaked the contrasts a bit (Fig.11 – 12).

Ok, that was the last part of the exterior lighting series. I hope I was able to give you some ideas for your work, and information about how to illuminate a more complex scene in Cinema 4D. Have a nice time and Happy Rendering!

Tutorial by:

FREDI VOSS

For more from this artist visit:

<http://fredivoss.cgociety.org/gallery/>

Or contact them:

vuuxx@gmx.de



- FREE SCENE & TEXTURES
THIS DOWNLOAD INCLUDES THE ARTIST
FINAL SCENE SET UP + TEXTURES



Fig.11



Fig.12

This series of five tutorials will focus on the topic of outdoor lighting and more specifically the task of setting up different light rigs to reflect a variety of weather scenarios. Each of the chapters will use the same base scene as a starting point and show a step by step guide to finding a lighting and rendering solution to describe a set time of day under different conditions ranging from a damp foggy night to sunset / sunrise.

The tutorials will explain the type of lights used and how to set up their parameters alongside the combined rendering settings in order to achieve an effective result. The manipulation of textures will also be covered in order to turn a daylight scene into night for example, as well as a look at some useful post production techniques in Photoshop in order to enhance a final still.

CHAPTER 1 | JANUARY ISSUE 053

Fog/Mist at Night-Time

CHAPTER 2 | MARCH ISSUE 055

Sunrise/Sunset

CHAPTER 3 | MARCH ISSUE 055

Moonlight

CHAPTER 4 | APRIL ISSUE 056

Midday Sun

CHAPTER 5 | THIS ISSUE

Overcast



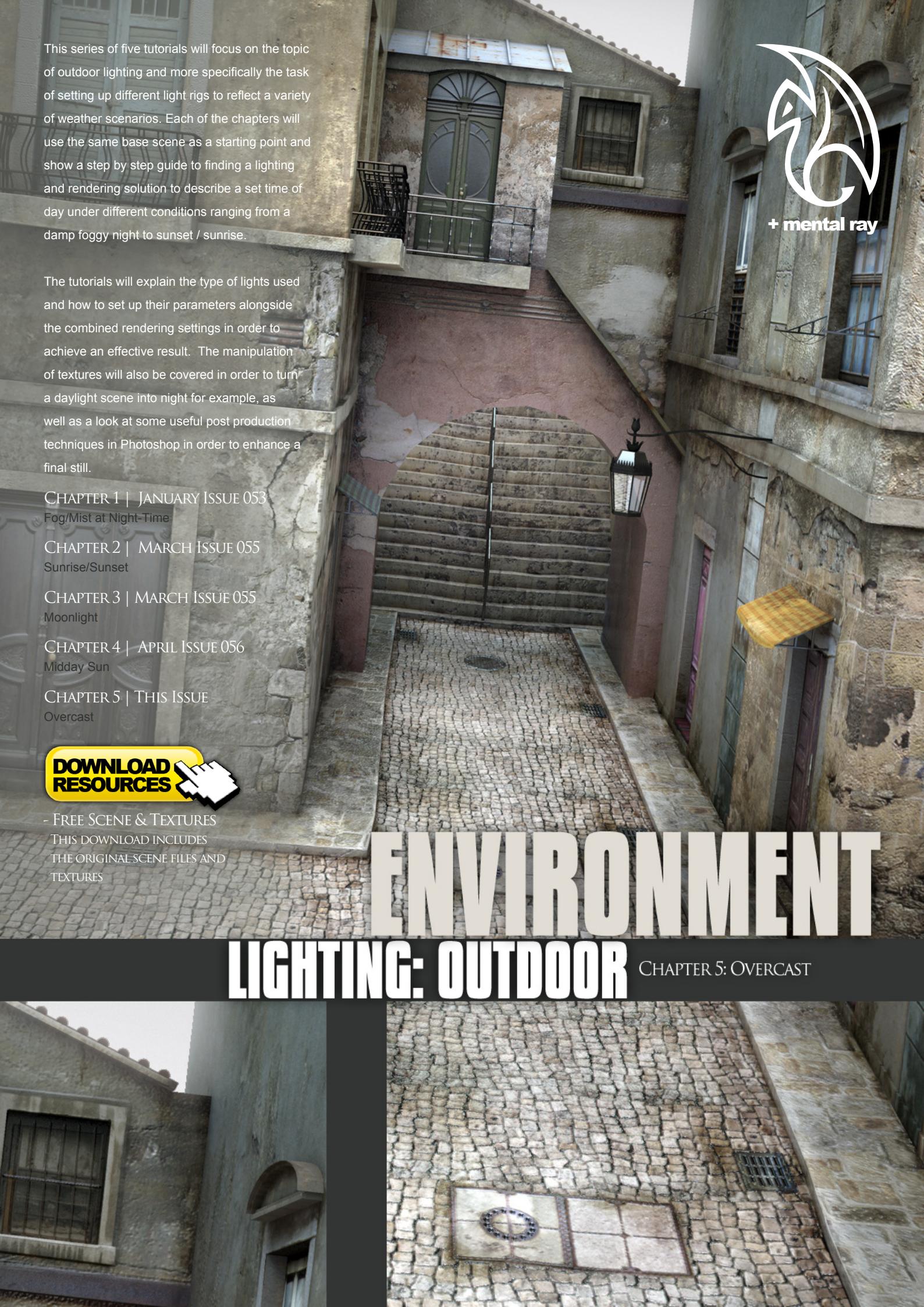
- FREE SCENE & TEXTURES

THIS DOWNLOAD INCLUDES
THE ORIGINAL SCENE FILES AND
TEXTURES

ENVIRONMENT

LIGHTING: OUTDOOR

CHAPTER 5: OVERCAST





CHAPTER 5 - OVERCAST

Software Used: Maya + Mental Ray

Welcome to the last Environment Lighting series tutorial. This time we'll create an overcast lighting set-up. As usual, we'll use Maya and mental ray for this task.

Open the Start.mb scene. It's the starting scene we used for the other tutorials, so there's nothing new here. We have got a camera already set and a couple of additional buildings (Fig.01).

Let's set mental ray as the renderer. Open the Render Setting window and choose mental ray from the drop-down menu (Fig.02).

Now let's create a basic lighting setup with

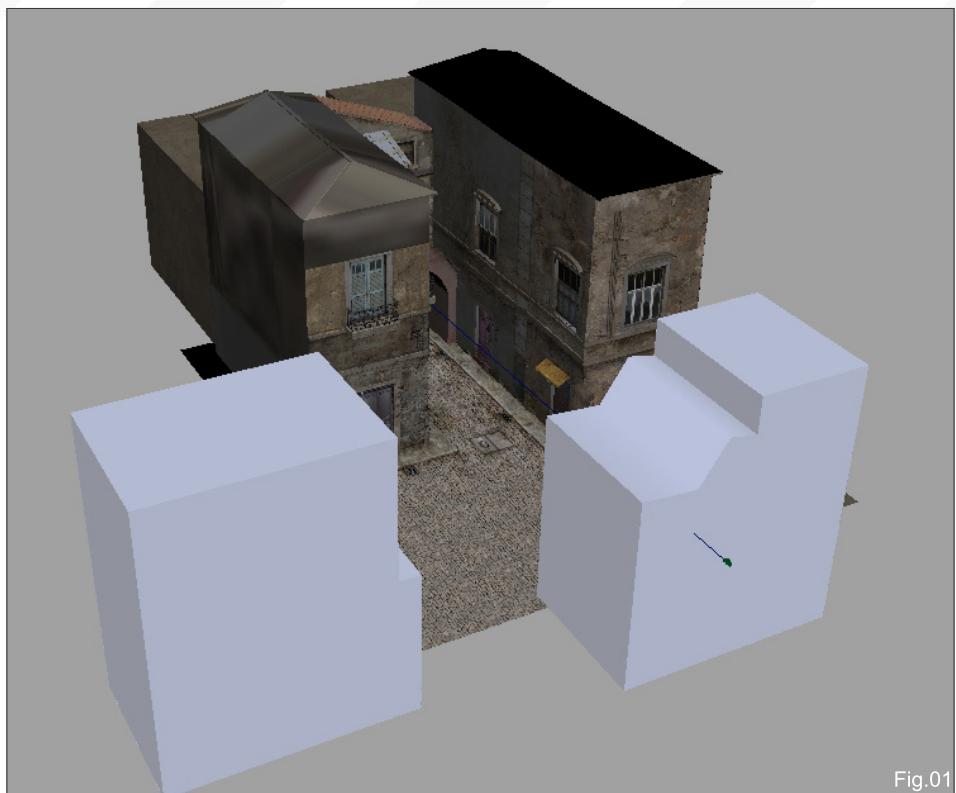


Fig.01

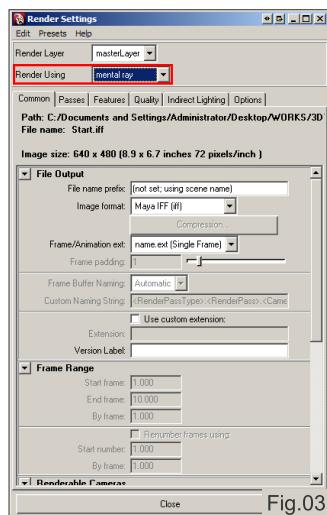
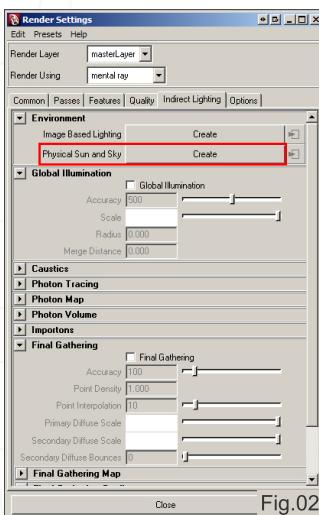


Fig.02

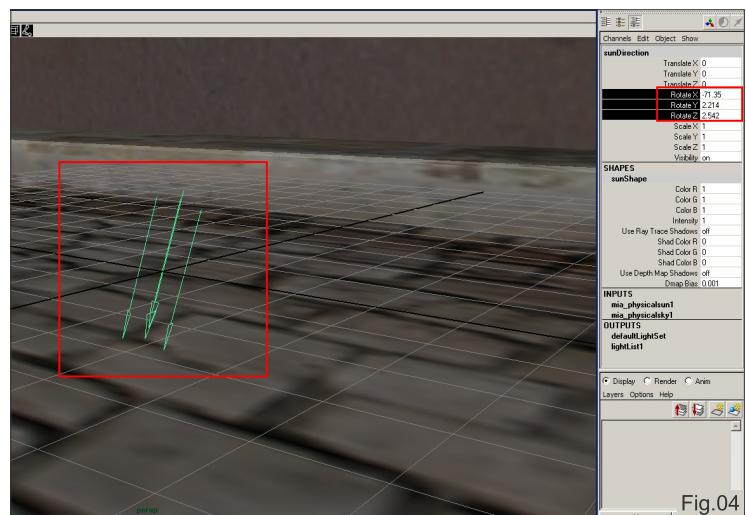


Fig.04



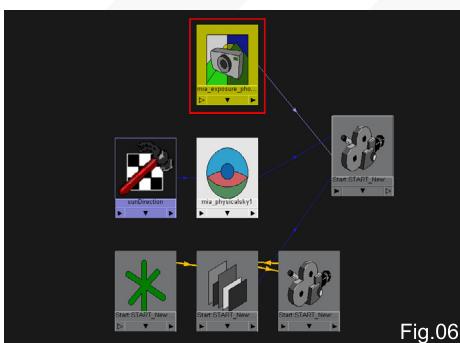
Fig.05

mental ray's Physical Sun and Sky. Switch to the Indirect Lighting tab and click on the Create button next to Physical Sun and Sky (Fig.03).

A new directional light will be created at the origin (Fig.04). Set its rotation values like shown.

If you render the scene, you'll notice that Physical Sun and Sky created all the necessary nodes and settings for a basic daylight situation (Fig.05).

This time we'll use a powerful mental ray node called mia_exposure_photographic to customize the lighting for our scene. Open the HyperShade and create a new mia_exposure_photographic node (Mental Ray nodes → Lenses → mia_exposure_photographic). Now drag this



node over the main camera node with the middle mouse button, and choose the default connection (Fig.06).

If you render the scene now, you'll probably get a full black picture. To fix this, reach the *mia_exposure_node* parameters and change the *Cm 2 Factor* value. This totally depends on your scene size and units. In this case, a value of 2000 will just be fine (Fig.07).

Now let's take care of the gamma. Open the Render Settings window and switch to the Quality tab, set the *Gamma* value in the Frame Buffer section to 0.454. Now set the *Gamma* value in the *mia_exposure_photographic* node to 1 (Fig.08).

Let's modify some more exposure parameters in the *mia_exposure_photographic* node. Set

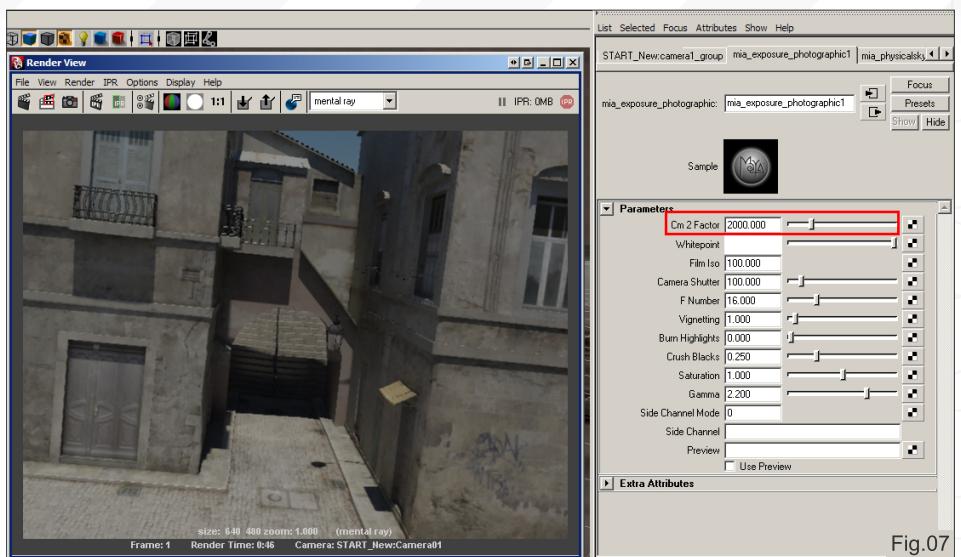


Fig.07

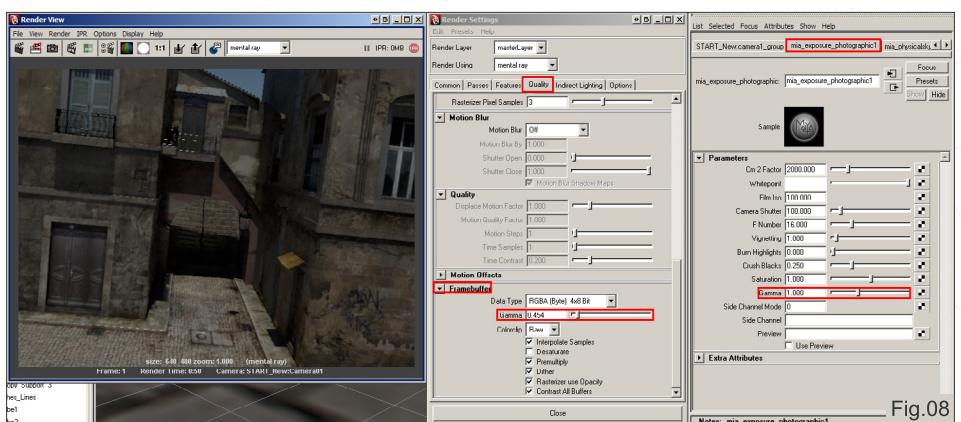


Fig.08

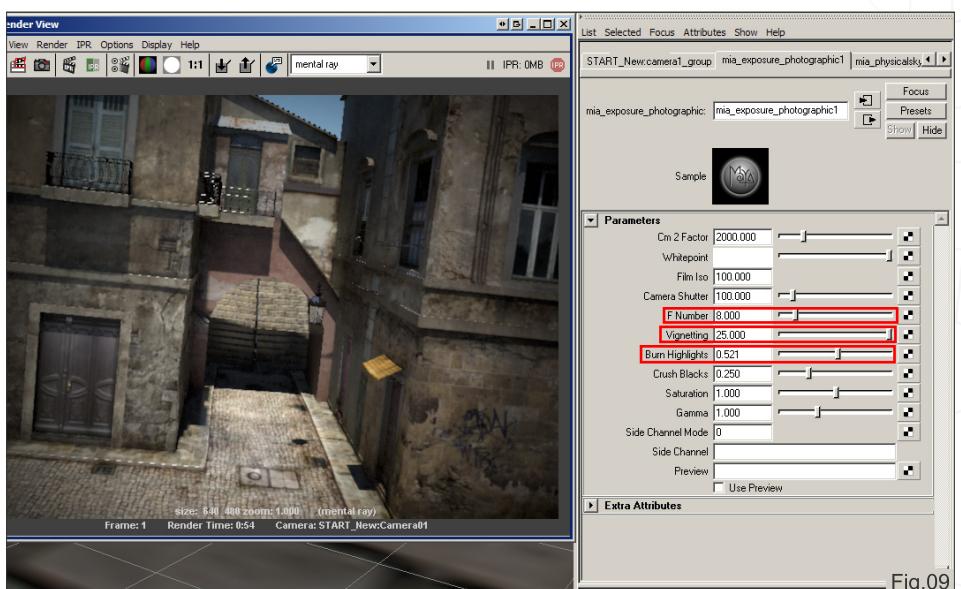


Fig.09

the *F Number* to 8, the *Vignetting* effect value to about 25 and the *Burn Highlights* value to about 0.5 (Fig.09).

let's change the *Shadow Softness* parameter in the *mia_physicalsun* node. Also, pump up the *Samples* value to 16 (Fig.10).

One important thing for an overcast lighting is shadows. We need them to be very soft, so

Now we're ready for the final rendering. Open the Render Setting window and increase the

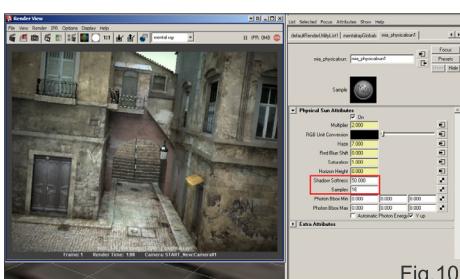


Fig.10

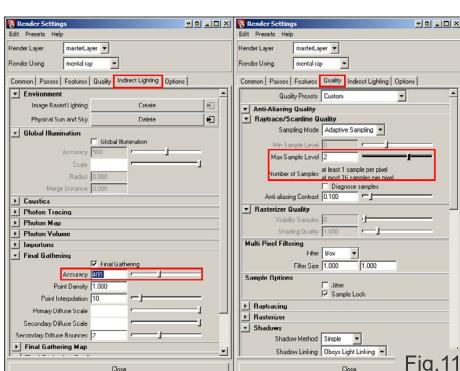


Fig.11

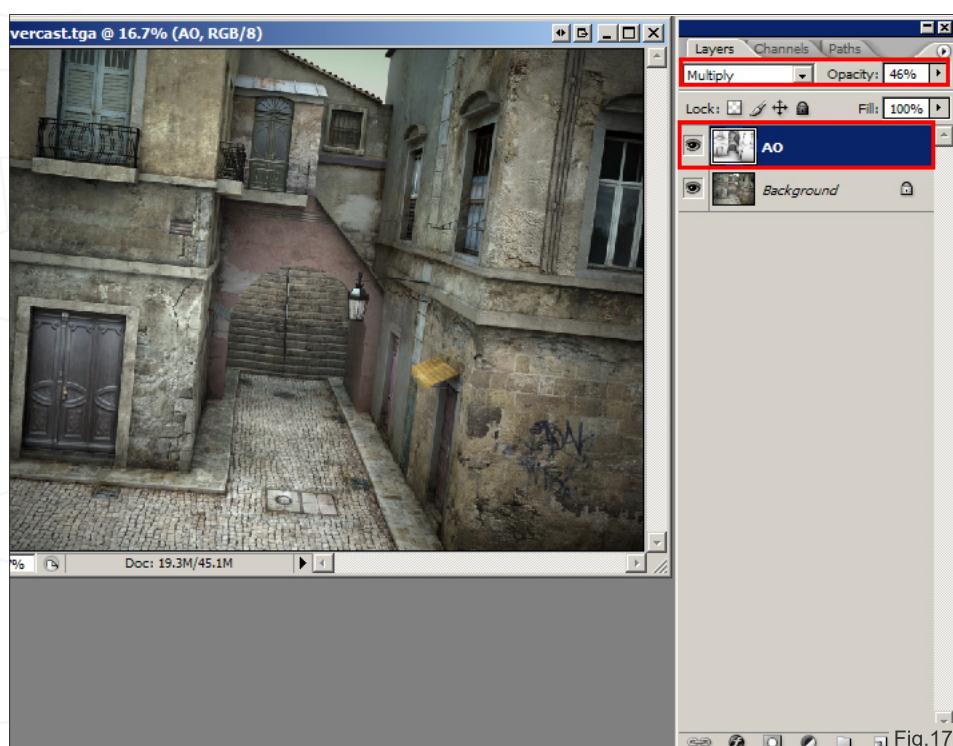
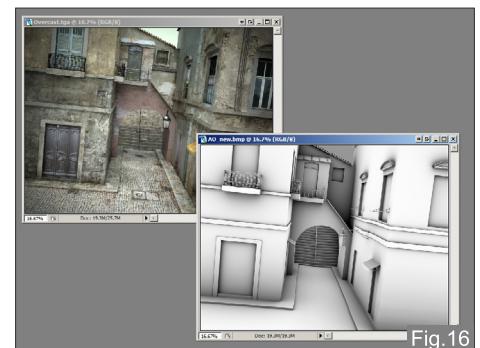
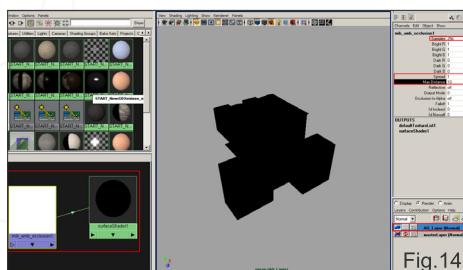
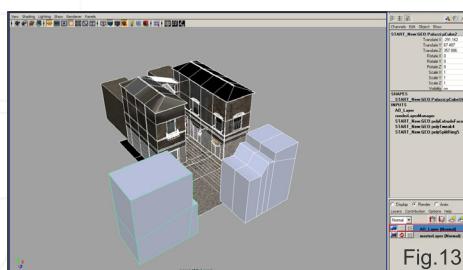


Accuracy value for the Final Gathering. Also, change the Max Sample Level in the Quality section, as shown in (Fig.11).

In (Fig.12) you can see the final color pass.

Before going on, we need an Ambient Occlusion pass for compositing reasons. Create a new render layer and call it AO_Layer. Assign all the geometry to this new rendering layer (Fig.13).

Open the HyperShade and create a new Maya Surface Shader, then create a new mental ray



mib_amb_occlusion node and connect it to the surfaceShader node (just drag the mib_amb_occlusion1 node over the surfaceShader1 node and choose "Default") (Fig.14). Right click on the AO_Layer render layer and choose Overrides / Assign Existing Material Override / and assign the ambient occlusion shader you just created to it.

Now render the scene and save the Ambient Occlusion pass as a TGA file (Fig.15).

Now open both the color and AO pass in Photoshop. Adjust the AO pass levels to get something similar to (Fig.16).

Copy and paste the AO pass over the color one. Change the AO layer's blending mode to Multiply and its Opacity to about 46% (Fig.17).

Tutorial by:

LUCIANO IURINO

For more from this artist visit:

<http://www.pmstudios.it>

Or contact them:

iuri@pmstudios.it





- FREE SCENE & TEXTURES
THIS DOWNLOAD INCLUDES THE ORIGINAL
SCENE FILES AND TEXTURES